

Part I: Project Information

GEF ID

10493

Project Type

EA

Type of Trust Fund

GET

CBIT

CBIT No

Project Title

Preparation of India's Fourth National Communication (4NC) and Fourth Biennial Update Report (BUR4) to the UNFCCC and strengthening institutional and analytical capacities on climate change.

Countries

India

Agency(ies)

UNDP

Other Executing Partner(s)

Ministry of Environment Forest and Climate Change (MoEFCC)

Executing Partner Type

Government

GEF Focal Area

Climate Change

Sector

Enabling Activity

Taxonomy

Climate Change Adaptation, Climate Change, Focal Areas, Climate Change Mitigation, Non-Governmental Organization, Civil Society, Stakeholders, Knowledge Generation, Capacity, Knowledge and Research, United Nations Framework Convention on Climate Change, Nationally Determined Contribution, Enabling Activities, Paris Agreement, Influencing models, Strengthen institutional capacity and decision-making, Type of Engagement, Information Dissemination, Consultation, Participation, Partnership, Private Sector, Large corporations, Community Based Organization, Academia, Communications, Public Campaigns, Awareness Raising, Gender Equality, Gender Mainstreaming, Beneficiaries, Gender results areas, Participation and leadership, Capacity Development, Knowledge Generation and Exchange, Knowledge Exchange, Learning, Targeted Research

Rio Markers
Climate Change Mitigation
Principal Objective 2

Climate Change Adaptation
Significant Objective 1

Biodiversity

Land Degradation

Type of Reports	Submission Date	Expected Implementation Start	Expected Completion Date	Expected Report Submission to Convention
UNFCCC National Communications (NC)	12/3/2021	8/1/2023	7/31/2028	12/31/2027
UNFCCC Biennial Update Report (BUR)	12/3/2021	8/1/2023	7/31/2028	12/31/2024

Duration
60In Months

Agency Fee(\$)
433,770.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCM-EA	GET	4,566,000.00	4,500,000.00
		Total Project Cost(\$)	4,566,000.00
			4,500,000.00

B. Project description summary

Project Objective

To support Government of India in preparation of the National Reports (4NC and BUR4) to UNFCCC and to strengthen institutional and technical capacity for implementation of the obligations under the UNFCCC on continuous and sustainable manner

Project Component	Expected Outcomes	Expected Outputs	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 1: National circumstances and institutional arrangements updated in BUR4 and 4NC	<p>Outcome 1.1: National circumstances and institutional arrangements relevant to the preparation of the national communications updated and described on a continuous basis.</p> <p>Outcome 1.2: Institutional Arrangement is described.</p>	<p>Output 1.1.1: The country's geographical features, measures towards sustainable development and poverty eradication and overall national circumstances, human population growth rates (along with gender, literacy rates and age class), natural resources, climate and economy which may affect the country's ability to deal with climate change mitigation and adaptation, described in the NC and BUR, where possible with gender disaggregated data on women's and men's role, issues, and decision-making in resources use</p> <p>Output 1.1.2: The ability to deal with mitigating and adapting to climate</p>	550,000.00	500,000.00

change, as well as information regarding specific needs and concerns arising from the adverse effects of climate change and/or the impact of the implementation of response measures analysed and reported.

Output 1.1.3: National development objectives, priorities and circumstances impacted by climate change and associated risks described and mainstreaming progress into policy frameworks assessed and reported.

Output 1.2.1: Gender balanced institutional system established and capacity strengthened for conducting research/ systematic observation and collecting, collating and analysing data for preparation of BUR4 and 4NC.

Output 1.2.2:
Description of institutional

arrangements relevant to the preparation of the NC, and BUR are reported on a continuous basis.

Component 2: Developing GHG inventory as per 2006 IPCC guidelines	Outcome 2.1: Improvement of GHG inventory through the use of tier-II and III methodologies for key category sectors.	<p>Output 2.1.1: Documented inventory of GHG emissions as per 2006 IPCC guidelines for (a) Energy (b) Transport (c) Industry (d) Agriculture (e) Land Use, Land Use Change and Forestry, and (f) Waste sectors, for 2021 (BUR4) and 2024/2025 (4NC).</p> <p>Output 2.1.2: Completed National Activity Data, and development and refinement of country specific Emission Factors and information for key category sectors.</p> <p>Output 2.1.3: Documented national and other methodologies adopted for the GHG inventory and analysis of application of the 2006 IPCC Guidelines in the GHG Inventory.</p>	1,388,500.00	900,000.00
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Output 2.1.4:
Developed
institutional capacity
for using 2006 IPCC
guidelines and
adoption of higher tier
estimation as
identified during ICA
of previous BURs.

Output 2.1.5:
Quantitative
estimates for all
source and sink
categories including
uncertainty
assessment as per
the IPCC Good
Practice Guidance and
other appropriate
methodologies
adopted along with
international
comparisons.

Output 2.1.6:
Improved time series
consistency and
recalculations based
on the revised country
specific emission
factors and better-
quality activity level
data, wherever
revised.

Output 2.1.7:
Uncertainty
management and
Quality Control and
Quality Assurance

Procedures in accordance with IPCC guidelines for key categories and individual categories in which significant methodological changes have occurred, established and applied on the information and data used.

Output 2.1.8:
Strengthened activity data flow systems to report on F-gases and precursor gases additional to CO₂, CH₄ and N₂O.

Output 2.1.9:
Continued strengthening of sectoral and network of supporting research institutions to allow continued collection of GHG data.

Component 3: Impact, Vulnerability, and Adaptation	Outcome 3.1: Improved climate change projections, appropriate actions planned for addressing impacts of, and vulnerability and adaptation to, climate change by	Output 3.1.1: Documented projections and results of impact assessments of climate change based on multiple Climate	963,214.00	1,300,000.00
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different sectors and regions with the use of advanced and updated climate change models.

Outcome 3.2: National capacities on climate change risk and vulnerability analysis are strengthened including, but not limited to, capacity enhancement on modelling and projections using various climate models

Change Models (CCMs) for different sectors in India.

Output 3.1.2:
Integrated system for multi-model ensemble for climate change and extreme climate events projections at the national level developed.

Output 3.1.3:
Vulnerability profiles based on i) currently established vulnerability indicators at the district spatial scale, ii) vulnerability indices that are decomposable across agro-climatic zones, populations groups by income strata, gender, rural or urban location, and administrative location up to district or sub-district level, both to be undertaken for overall vulnerability, and for different sectors.

Output 3.1.4:
Documented ranking of (climatic parameter wise) most vulnerable natural ecosystems and organisms, crops,

and water resources
at district level for
India.

Output 3.1.5: Critical
infrastructure
resilience index for
major infrastructure at
state and/or district
levels, including
application of
techniques developed
for the Coalition on
Disaster Resilient
Infrastructure.

Output 3.1.6:
Adaptation framework
describing over-
arching requirements
and institutional
mechanisms,
including formulation
of adaptation plans
for five-year time
periods, or as may be
appropriate.

Output 3.2.1:
Individual, Institutional
and Systemic capacity
strengthened for
documenting climate
scenarios (short-,
medium-, and long-
term) based on
Multiple Global
climate models (GCM)
/ Regional Climate
Models (RCMs) and

climate change
parameters at RCM
grid level.

Output 3.2.2: National
and State level
Capacity built on
vulnerability and
adaptation analysis,
modelling and
assessment
enhanced, which may
include assessment
of vulnerability and
recommendations for
greater resilience to
climate changes and
natural disasters
caused by climate
change.

Output 3.2.3:
Development of web-
based information of
multi-model ensemble
climate change and
extreme climate
events projections at
the national level.

Output 3.2.4: Tools,
methods, and training
of staff for the
assessment of
climate change
impact, vulnerability,
risk, development and
refinement of National
Adaptation

Framework and Plans
thereunder.

Component 4: Finance, Technology and Capacity Building Needs and Support Received	<p>Outcome 4.1: Updated information on constraints and gaps, and related financial, technical and capacity-building needs provided to UNFCCC through BUR-4 and 4NC.</p> <p>Outcome 4.2: Individual, institutional and systemic capacity built, and technical skills strengthened.</p>	<p>Output 4.1.1: Report on the gap analysis and constraints pertaining to (a) technological innovation(s) and technology transfer, (b) financial assistance needed and received including scale, scope and speed of climate finance, and (c) finance requirements for mitigation measures based on the national and state climate change action plans, and (d) finance requirements for adaptation.</p> <p>Output 4.1.2: Completed technology needs assessment (TNA) for different sectors.</p> <p>Output 4.1.3: Documentation on the detailed information of key mitigation-adaptation technology needs, availability of those technologies in the country, national</p>	178,800.00	500,000.00
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R&D programs, implementation & monitoring of activities, technology transfer needs, and financial support received and needed along with limitations.

Output 4.2.1:
Technical, technological, financial and capacity building needs for CC impacts, mitigation and adaptation assessed and reported in BUR4 and 4NC.

Component 5: Mitigation Actions and Domestic MRV	<p>Outcome 5.1: GHG mitigation policies and measures including their macro-economic impacts reviewed.</p> <p>Outcome 5.2: Establishment of domestic Measurement Reporting and Verification arrangements supported.</p>	<p>Output 5.1.1: Documentation on national climate change mitigation actions, policies and measure, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans.</p> <p>Output 5.1.2: (a) Improved future GHG emission scenarios for India using up-to-date information as well as the progress towards NDC targets assessed. (b) Climate</p>	895,700.00	500,000.00
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finance received with specific reference to NDC targets that have been set conditional to the availability of finance, technology and capacity-building support.

Output 5.1.3: Sector wise progress assessments and mitigation scenarios to model possible trajectory of greenhouse gas emissions by key sectors (such as energy, waste and industrial processes) up to 2050 developed.

Output 5.1.4: Mitigation-potential for energy and land-use change, and costs of action and non-GHG mitigation benefits.

Output 5.1.5: Report on GHG emission projections and removals, wherever possible and applicable.

Output 5.1.6: Cost of mitigation for India

Output 5.2.1:
Strengthening
national human and
institutional
capacities to establish
a domestic MRV
system of emissions
and mitigation and
means of
implementation
identified in
coordination with
similar initiatives.

Output 5.2.2: Updated
protocol for defining
baseline and MRV of
GHG specific
mitigation actions.

Output 5.2.3: Capacity
enhanced for
assessing and
quantifying mitigation
actions at the state
level as
recommended by ICA
of previous BURs.

Component 6: Preparation of Fourth Biennial Update Report and Fourth National Communication for submission to the UNFCCC, Knowledge Management, Monitoring and Evaluation.	Outcome 6.1: Preparation of Fourth Biennial Update Report and Fourth National Communication for submission to the UNFCCC, Knowledge Management, Monitoring and Evaluation.	Output 6.1.1: BUR4 and 4NC compiled and prepared for submission to the UNFCCC. Output 6.1.2: Publication and dissemination of BUR4, development and dissemination of	240,000.00	300,000.00
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Outcome 6.2: Other information relevant for the preparation of the 4NC.

key policy papers relevant for decision making, technical reports and brief summaries of the key climate changes issues and findings for various stakeholders such as general public, civil society organisations and private sector.

Output 6.1.3: The ICA process for BUR4 is completed and suggestions incorporated in 4NC as may be appropriate.

Output 6.1.4. Project regularly monitored, financial audit conducted, lessons learned compiled and disseminated. Inception workshop, project Board meetings and Stakeholders Consultation workshops organized.

Output 6.2.1: Comprehensive description of systematic observations and research on climate change

Output 6.2.2:
Document the contributions to CC mitigation and adaptation of various stakeholders such as Ministries/Depts at central and state levels, Civil Society and private sector.

Output 6.2.3: New and other information not related to NCs and BURs under the aegis of the convention UNFCCC.

Component 7: Stakeholder Awareness and Capacity Building, and South-South Cooperation	<p>Outcome 7.1: Stakeholder (such as leaders, bureaucrats, industries/businesses , media and general public) Aware and Capacity Built on climate change impacts, mitigation and adaptation at the national and state levels.</p> <p>Outcome 7.2: South-South Cooperation</p>	<p>Output 7.1.1. Assessment of gaps, needs and priorities for education, training and public awareness important for stakeholders' involvement in the preparation of national reports, including the information on education and public awareness activities.</p> <p>Output 7.1.2: Public awareness campaigns on climate change at the national and state levels, as well as trainings on climate change for business,</p>	139,500.00	50,000.00
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civil society
organizations (CSOs),
healthcare specialists,
journalists and civil
servants engaged in
climate change
organised.

Output 7.1.3:
Strengthened
institutional and
policy support
framework for
undertaking climate
change actions and
capacity building at
various levels
including publications
for wider
dissemination and
discussion at national
and state levels.

Output 7.1.4:
Enhanced framework
for implementation of
State Action Plan on
Climate Change
(SAPCC) through
assessment of
various
needs/constraints
such as technical,
capacity, research,
and financial
constraints.

Output 7.2.1: Lessons
learnt and best
practices exchanged

with other parties of
the global south.

Output 7.2.2:
Trainings and capacity
building in GHG
inventory, MRV, CC
mitigation and
adaptation and other
components of BURs
and NCs for national
and international
experts.

Sub Total (\$)

4,355,714.00

4,050,000.00

Project Management Cost (PMC)

210,286.00

450,000.00

Sub Total(\$)

210,286.00

450,000.00

Total Project Cost(\$)

4,566,000.00

4,500,000.00

Please provide justification

C. Source of Co-Financing for the Project by Name and by Type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Ministry of Environment Forest and Climate Change	In-kind	Recurrent expenditures	4,500,000.00
			Total Co-Financing(\$)	4,500,000.00

Describe how any "Investment Mobilized" was identified

Not Applicable

D. GEF Financing Resources Requested by Agency, Country and Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	GET	India	Climate Change	CC STAR Allocation	3,714,000	352,830	4,066,830.00
UNDP	GET	India	Climate Change	CC Set-Aside	852,000	80,940	932,940.00
Total Gef Resources(\$)					4,566,000.00	433,770.00	4,999,770.00

Part II. Enabling Activity Justification

A. ENABLING ACTIVITY BACKGROUND AND CONTEXT

Provide brief information about projects implemented since a country became party to the convention and results achieved

The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)

India's vulnerability to climate change manifests into greater challenges due the size of the country, the volume and diversity of the population, the variability of weather patterns and different climates, and the development requirements. It is the seventh-largest country in the world, containing several different climatic conditions such as freezing mountainous areas in the Himalayas, land areas in the north of the country experiencing a continental climate, with fierce summer heat that alternates with cold winters when temperature plunges to freezing point, and rain-heavy coastal regions in the south of the country with the important monsoon seasons.

However, climate change effects India considerably, with the annual average temperature of the country increasing at a rate of 0.61°C per 100 years during the period 1901-2019. There have been considerable changes in the frequency of dry days, rainy days, and heavy rainfall, most of the Himalayan glaciers are retreating at an accelerate rate in the past few decades, and sea levels along the Indian coast are rising.

In addition, India holds approximately 18% of the world's population, putting the country under increased pressure to ensure sustainable development and harness its resources efficiently. This is further exacerbated due to the considerable share of the population of India being dependent on climate-sensitive sectors and areas for their livelihoods such as water resources, food production, forests and fisheries. Around 30% of India's population is dependent on the rich, exploitable coastal and marine resources and two of the largest cities in the country, namely Mumbai and Chennai, are located along the coast. Regional and inter-state disparities and these increasing extreme events such as floods, earthquakes, and droughts reverse the development process to a great extent and additionally worsen the situation of the disadvantaged and vulnerable groups. The country has the largest proportion of the global poor (30%), with around 24% of the population lacking access to electricity, approximately 30% of the population relying on solid biomass for cooking, and 92 million people not having access to safe drinking water. This highlights the importance of addressing the adverse effects of climate change in the country, and to ultimately achieve the Millennium Development Goals.

India's emissions are linked to economic development – an imperative that no one can ignore. As per India's third Biennial Update Report (BUR) to UNFCCC, India's total GHG emissions, excluding Land Use Land-Use Change and Forestry (LULUCF) were 2,838.89 million tonne CO₂e and 2,531.07 million tonne CO₂e with the inclusion of LULUCF. Carbon dioxide emissions accounted for 2,231 million tonne (78.59 per cent), methane emissions for 409 million tonne CO₂e (14.43 per cent) and nitrous oxide emissions for 145 million tonne CO₂e (5.12 per cent) in 2016.

India has progressively continued decoupling of economic growth from greenhouse gas emissions. India's emission intensity of gross domestic product (GDP) has reduced by 24 per cent between 2005 and 2016. India's per capita GHG emission in 2016 was 1.96 t CO₂e equivalent, which is less than one- third of the world's per capita emissions and far below than many developed and developing countries. Per capita energy consumption of India grew by 24.32 per cent from 2011-12 to 2018-19. Historically, between 1850 and 2017, India has only contributed about 4 per cent to global cumulative emissions.

To this extent, India is committed at the highest level to meeting its national commitments complying with the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement. The Government of India signed the UNFCCC on June 10, 1992 and ratified it on November 1, 1993. India also ratified the Kyoto Protocol in 2002 and finally, in 2016, India signed and ratified the Paris Agreement.

The baseline scenario and any associated baseline projects

As a party to the UNFCCC, India is obliged to regularly submit national reports on how the country is implementing the Convention to the Conference of the Parties (COP) of the UNFCCC. This is highlighted under Article 4.1 "Commitments" of the Convention, which, among others states that all Parties shall *"develop, periodically update, publish and make available to the Conference of the Parties, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties" and "formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change"*. Reporting through national communications (NCs) and biennial update reports (BURs) is the Convention's primary source of information on Parties implementation of commitments and collective progress toward meeting its ultimate objective. Preparation of NCs and BURs helps India to focus coordination and planning at the national level and is an important strategic tool to help align its interests and priorities to the overall goals of the UNFCCC. In this way, a regular reporting obligation can facilitate the development of permanent institutional capacity and processes related to climate change activities. Secondly, communication of information on implementation provides a vehicle for exchange of experiences and learning globally.

NCs provide information on greenhouse gas (GHG) inventories, measures to mitigate and to facilitate adequate adaptation to climate change, and any other information that the Party considers relevant to the achievement of the objective of the Convention. NCs are submitted every four years.

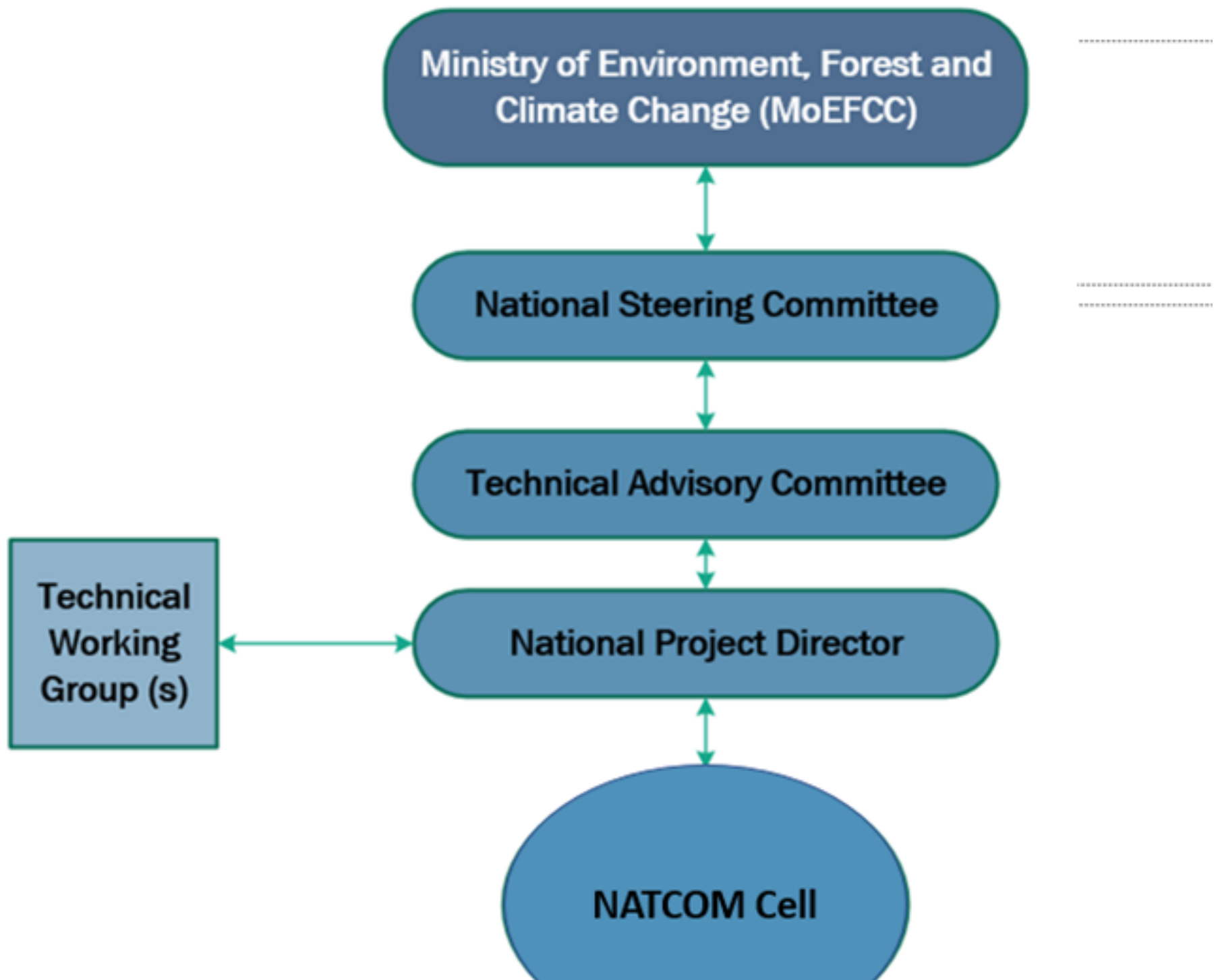
BURs provide an update of the information presented in NCs, in particular on national GHG inventories, mitigation actions, constraints and gaps, including support needed and received.

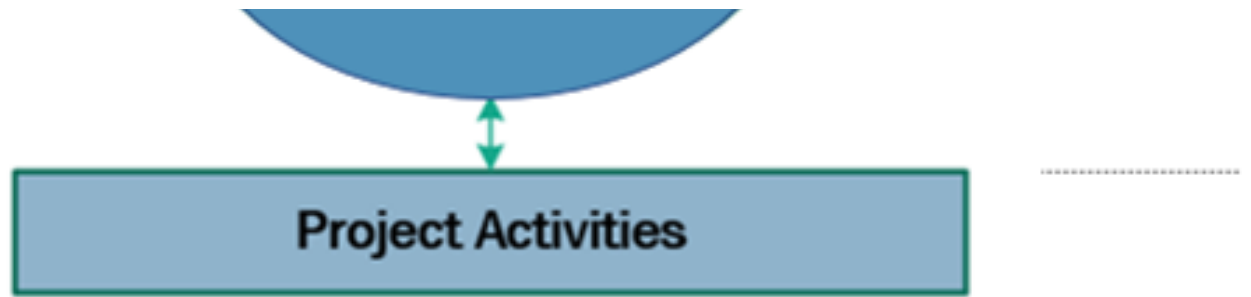
India submitted its Initial National Communication (INC) to the UNFCCC on June 22, 2004 and its Second National Communication (SNC) on May 4, 2012. It has additionally submitted three BURs, the first on January 22, 2016, the second on December 31, 2018, and recently its third on February 20, 2021. All these national reports identified several technical, scientific, financial, and policy-related capacity constraints, which need to be further improved upon in the subsequent NCs and BUR to ensure continuous reporting on a consistent basis and in accordance with the existing guidelines.

The Ministry of Environment, Forest and Climate Change (MoEFCC) is the nodal ministry within India's Government for the coordination and management of actions related to the UNFCCC and the Intergovernmental Panel on Climate Change (IPCC), as well as matters related to the national reporting obligations of India under the UNFCCC. It is responsible for all international, bilateral, and multilateral environmental Conventions and Protocols. As issues related to climate action span different sectors, the MoEFCC is additionally responsible for the coordination with other Ministries and Departments of the Government of India. To this extend, the MoEFCC has set up an inter-Ministerial Committee, as well as a Technical Advisory Committee of sectoral experts for the implementation of aspects regarding to India's national reporting obligations to the Convention.

In this context, the MoEFCC is the implementing and executing entity of the current transparency framework and assigns several studies, conducts activities including workshops and national consultations for the preparation of the national communications and BURs. The issues related to climate action cuts across different sectors and are thus managed through a whole systems approach supported by key Ministries/ Departments of Government of India.

Institutional arrangements set up for the elaboration of NCs/BURs on a project-by-project basis





National Steering Committee (NSC): Inter-Ministerial Committee chaired by Secretary (EF&CC) with members drawn from concerned Ministries/ Departments of Government of India. Special Invitees could be invited to the meetings on need basis. NSC meets once in six months to guide and oversee the project performance. The composition of the NSC is as follows:

1. Additional Secretary (in-charge of climate change matters), MoEFCC
2. Representative of CEO, Niti Aayog
3. Representative of Secretary, Ministry of Power
4. Representative of Secretary, Department of Agriculture and Farmer's Welfare
5. Representative of Secretary, Department of Agricultural Research and Education
6. Representative of Secretary, Department of Economic Affairs
7. Representative of Secretary, Ministry of New and Renewable Energy
8. Representative of Secretary, Ministry of Science and Technology
9. Representative of Secretary, Ministry of Coal
10. Representative of Chairman, Railway Board
11. Representative of Secretary, Ministry of Civil Aviation
12. Representative of Secretary, Ministry of Road Transport & Highways
13. Representative of Secretary, Ministry of Shipping
14. Representative of Secretary, Ministry of Petroleum & Natural Gas
15. Representative of Secretary, Ministry of Jal Shakti
16. Representative of Secretary, Ministry of Health & Family Welfare

17. Representative of Secretary, Ministry of Earth Sciences
18. Representative of Secretary, Ministry of Housing & Urban Affairs
19. Representative of Secretary, Ministry of Rural Development
20. Representative of Secretary, Ministry of Statistics & Programme Implementation
21. Representative of Secretary, DPIIT, Ministry of Steel
22. Representative of Secretary, Ministry of Heavy Industries and BEE
23. Representative of Director General, India Meteorological Department
24. Representative of Director General, Bureau of Energy Efficiency
25. Representative of Joint Secretary, Ministry of External Affairs
26. Joint Secretary (Climate Change), MoEFCC
27. Advisor (Climate Change), MoEFCC (as member convenor)

Experts (as identified during project inception/ implementation phase on need basis and as special invitees)

Technical Advisory Committee (TAC): The TAC provides technical guidance for the preparation of the reports. This committee has members from the government, academia, private sector and civil society organizations.

Technical Working Groups (TWG): Theme-based Technical Working Groups (TWG) drawing subject experts from different sectors are set up to provide expert advice and guidance for the effective implementation of the project. The TWGs meet on a quarterly basis or on need basis. The Chair and members of TWGs are decided at the project inception or during project implementation phase. Some of these TWGs are as follows:

1. GHG inventory
2. Mitigation
3. Adaptation
4. Financial, Technological and Capacity-building support needed and received

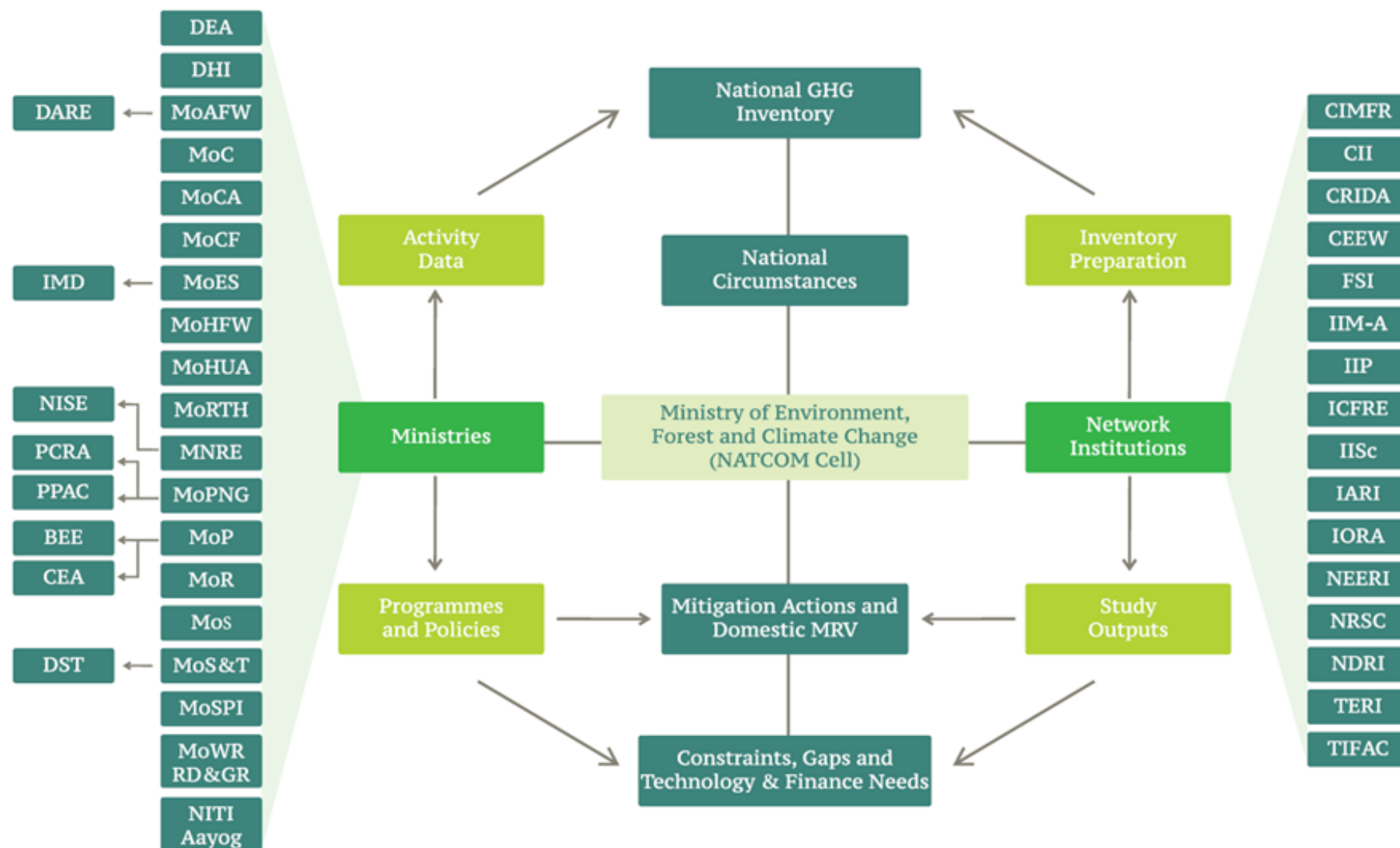
National Project Director is a senior level government officer from MoEFCC in-charge of climate change matters.

The institutional arrangements for preparing these reports include a purpose-driven, provisional National Steering Committee (NSC) including an expert-led Technical Advisory Committee (TAC). The NSC under the chairmanship of the Secretary, MoEFCC oversees the preparation and implementation of the work programme of these reports. Various ministries and government departments concerned with different elements of information have NSC representation. These ministries and departments also provide input for the reports. The TAC provides technical guidance for report preparation. This committee includes members from the government, academia, private sector, and civil society organizations.

The data/information presented in India's NCs and BURs incorporate several studies launched and conducted by institutions having sector-specific expertise. Reports are reviewed by a range of academic and government experts prior to the TAC and NSC meetings.

Expert institutions including Government institutions, academic and research institutions, industrial association, and civil society organizations are shown in the figure below.

Network of institutions involved in the elaboration of the UNFCCC reports.



Indicative list of Expert Institutions

CEEW: Council on Energy, Environment and Water, New Delhi

IIP: Indian Institute of Petroleum, Dehradun

CIMFR: Central Institute of Mining and Fuel Research, Dhanbad

IISc: Indian Institute of Science, Bengaluru

CRIDA: Central Research Institute for Dryland Agriculture, Hyderabad

IORA: IORA Ecological Solutions, New Delhi

CII: Confederation of Indian Industry, New Delhi

NDRI: National Dairy Research Institute, Karnal

FSI: Forest Survey of India, Dehradun

NEERI: National Environmental Engineering Research Institute, Nagpur

IARI: Indian Agricultural Research Institute, New Delhi

NRSC: National Remote Sensing Centre, Hyderabad

ICFRE: Indian Council of Forestry Research and Education, Dehradun

TERI: The Energy and Resources Institute, New Delhi

IIM-A: Indian Institute of Management, Ahmedabad

TIFAC: Technology Information, Forecasting and Assessment Council, New Delhi

Ministries/Departments

BEE: Bureau of Energy Efficiency

MoHUA: Ministry of Housing and Urban Affairs

CEA: Central Electricity Authority

MoP: Ministry of Power

DARE: Department of Agricultural Research and Education

MoPNG: Ministry of Petroleum and Natural Gas

DEA: Department of Economic Affairs

MoR: Ministry of Railways

DHI: Department of Heavy Industry

MoRTH: Ministry of Road Transport and Highways

DST: Department of Science and Technology

MoS: Ministry of Steel

IMD: India Meteorological Department

MoSPI: Ministry of Statistics and Programme Implementation

MoAFW: Ministry of Agriculture and Farmers Welfare

MoST: Ministry of Science and Technology

MoC: Ministry of Coal

MoWR, Ministry of Water Resources

RD&GR: River Development & Ganga Rejuvenation

MoCF: Ministry of Chemicals and Fertilizers

MNRE: Ministry of New and Renewable Energy

MoCA: Ministry of Civil Aviation

NISE: National Institute of Solar Energy

MoES: Ministry of Earth Sciences

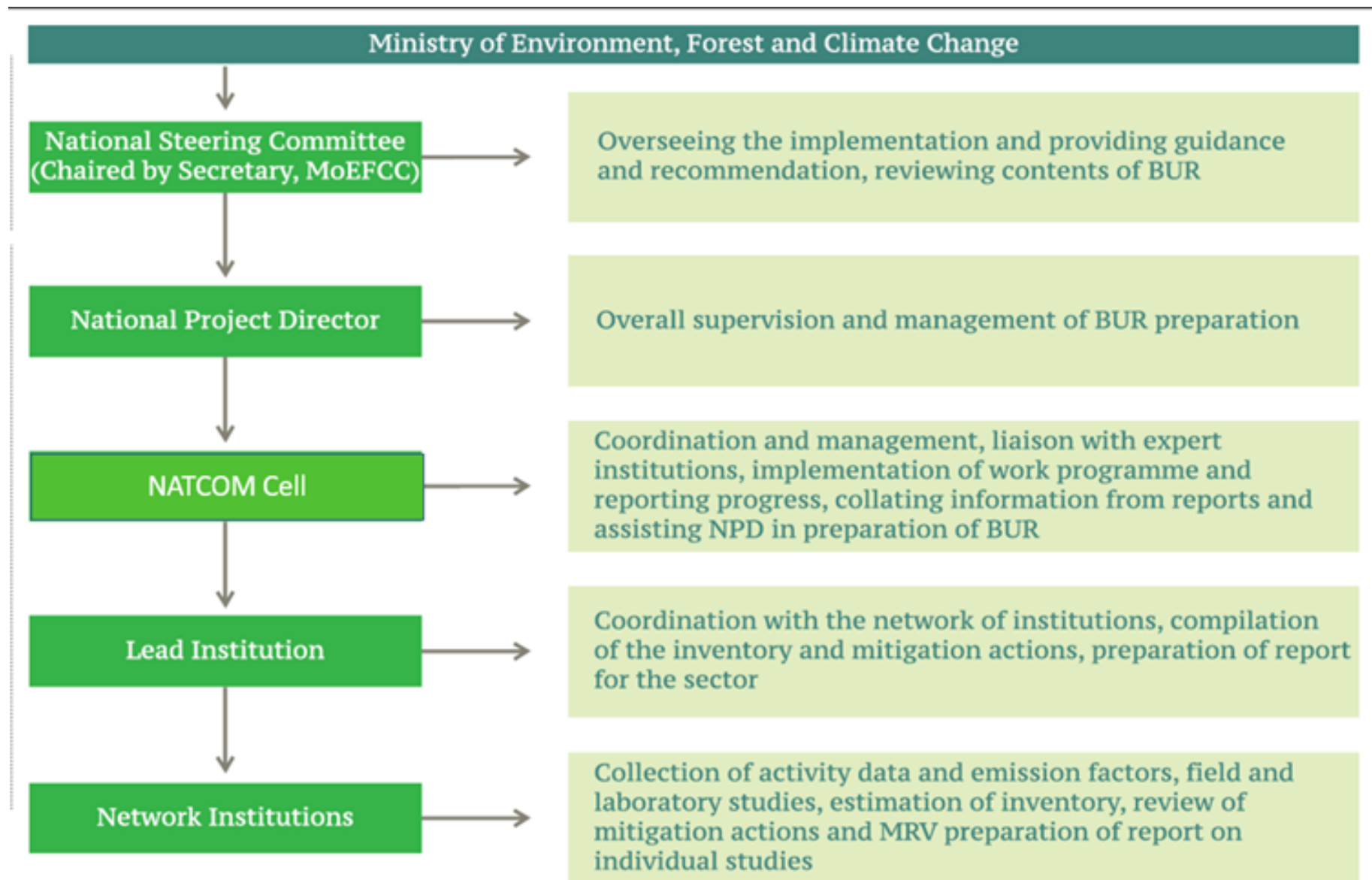
NITI Aayog: National Institution for Transforming India Aayog

MoHFW: Ministry of Health and Family Welfare

PCRA: Petroleum Conservation Research Association

PPAC: Petroleum Planning and Analysis Cell

Responsibilities and roles of the institutions.



The Ministries/ Departments of the Government of India provides sector-specific information which is then processed by the sector specific national experts (to whom studies are awarded) for national reporting use. Thereafter, the processed information is vetted and approved by the concerned Ministries/ Departments through several rounds of consultations before it is included in BURs/NATCOMs, officially. The national reports also go through an independent peer review process involving sector experts drawn from academia, research institutions, civil society and members of industrial associations. After the peer review process, the national report undergoes the approval process which includes approval by the Technical Committee (chaired by Additional Secretary, Climate Change in MoEFCC and comprising of technical experts), National Steering Committee (chaired by Secretary (EF&CC)/ Additional Secretary and

comprising of Government of India Ministries / Departments). Thereafter, the national report is placed under consideration for approval by the Minister of Environment, Forest and Climate Change. After the Minister's approval, the national report goes through the Union Cabinet (Government of India) approval process – which includes circulation of the national report in Hindi and English along with the Cabinet note to all the concerned Government of India Ministries/ Departments. Comments received are addressed and after adequate due process, the national report is approved by the Government of India. Once the report is approved by Union Cabinet, it is officially submitted by MoEFCC on behalf of the Government of India to UNFCCC. It is a strategic, rigorous, and focused process that heavily incorporates system-wide internal communication, while raising awareness.

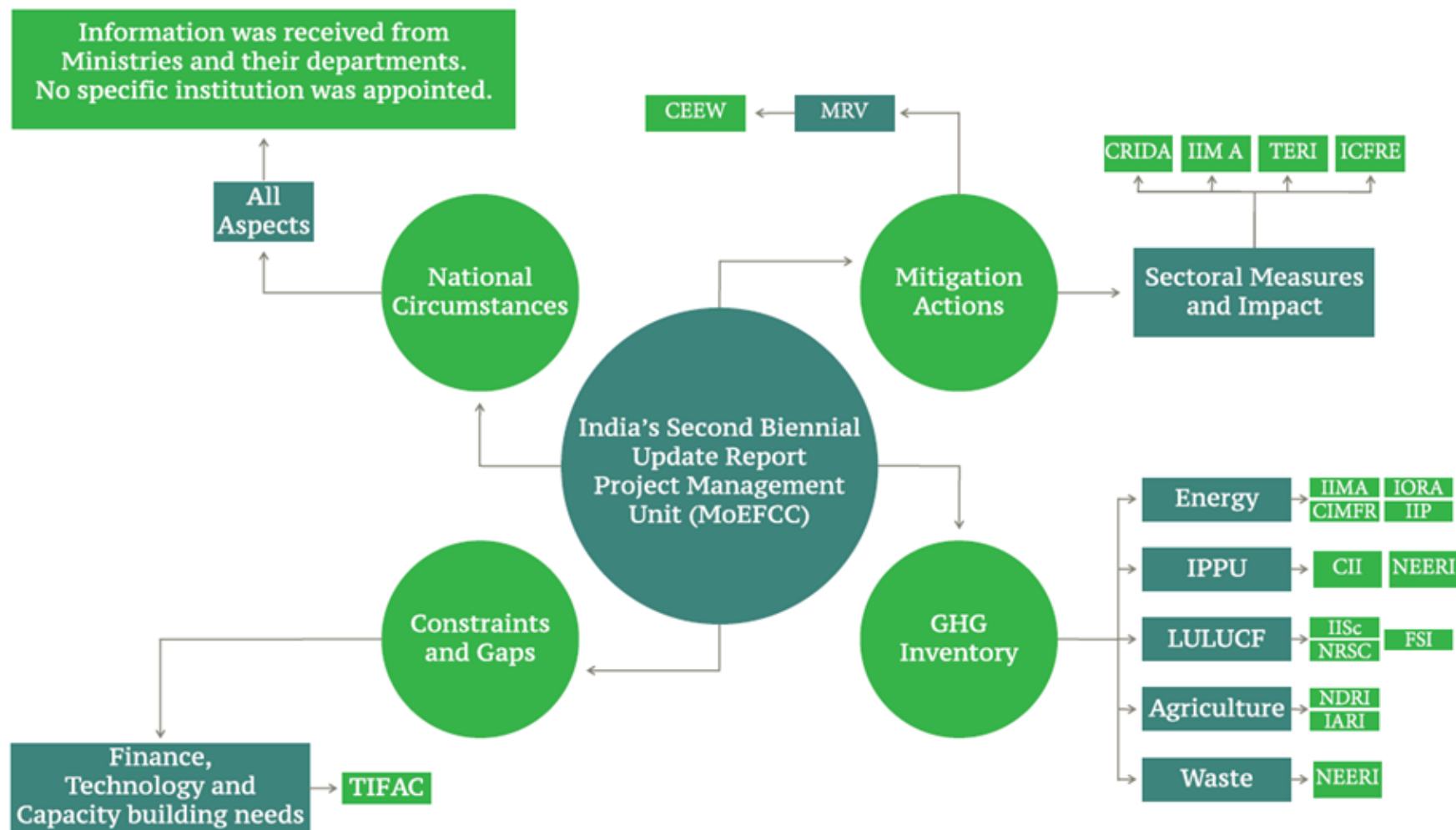
Sector specific information for BUR-2 and BUR-3 and Third NC is being provided, vetted and approved by the following Ministries/ Departments/ Institutions of the Government of India:

1. Department of Economic Affairs, Ministry of Finance
2. Department of Heavy Industries, Ministry of Heavy Industries and Public Enterprises
3. Ministry of Agriculture and Farmer's Welfare
4. Ministry of Coal
5. Ministry of Power
6. Bureau of Energy Efficiency, Ministry of Power
7. Central Electricity Authority, Ministry of Power
8. Ministry of External Affairs
9. Ministry of New and Renewable Energy
10. National Institute of Solar Energy, Ministry of New and Renewable Energy
11. Ministry of Earth Sciences
12. India Meteorological Department, Ministry of Earth Sciences
13. Ministry of Chemicals and Fertilizers
14. Ministry of Civil Aviation
15. Ministry of Railways
16. Ministry of Road Transport and Highways
17. Ministry of Health and Family Welfare
18. Ministry of Housing and Urban Affairs
19. Ministry of Petroleum and Natural Gas
20. Petroleum Planning and Analysis Cell, Ministry of Petroleum and Natural Gas
21. Petroleum Conservation Research Association, Ministry of Petroleum and Natural Gas
22. Department of Science and Technology, Ministry of Science and Technology
23. Ministry of Statistics and Programme Implementation
24. Ministry of Jal Shakti
25. Niti Aayog

State Governments normally provide information on their respective climate change measures duly reported in relevant chapters.

As per the current arrangements for the preparation of NATCOM and BUR, approximately 150 people are involved with the national reporting process with an approximate woman to man ratio of 40:60.

Activity and information flow in the current transparency framework of India



The main roles involved for each thematic component of the reports are as follows:

- Ministry of Environment, Forest and Climate Change: The Ministry coordinates, supervises, and processes for approval and submission of the reports to UNFCCC. A National Steering Committee chaired by the Secretary/Additional Secretary, MoEFCC is in place with Adviser/Scientist-G, MoEFCC in his capacity

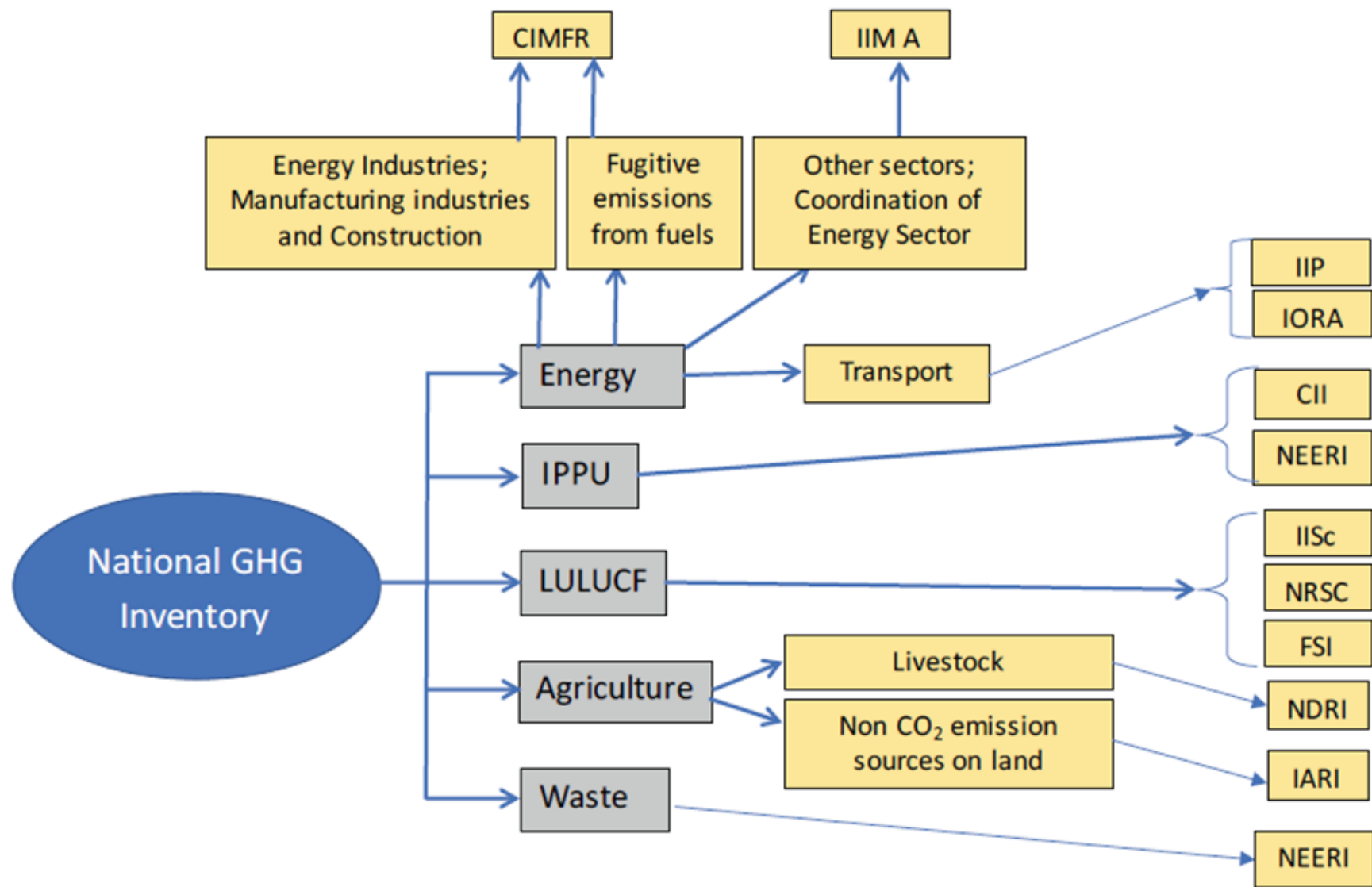
as National Project Director (NPD) as Member Secretary. The members are representatives from all relevant ministries and departments. BUR is endorsed by the Minister and approved by the Government of India.

- ☐ Expert Institutions: These institutions are engaged in compiling the GHG inventory, mitigation actions and other components. One coordinating institution is generally appointed for each sector. A network of institutions works for each sector.
- ☐ Resource Institutions: These institutions provide data and information for each component. These include ministries and their departments/ agencies/ institutions, research institutions and universities, industrial units, Public Sector Undertakings and Industry associations and other departments involved in generating and compiling data.
- ☐ Reviewers: The reports are peer-reviewed by independent experts (experts other than those participating in the preparation of the document) followed by the Technical Advisory Committee and ministries/concerned departments.

India in its efforts to support coherent and integrated systems is currently in the process of developing a National Inventory Management System (NIMS). NIMS will coordinate supporting institutions with strategic capacity for the preparation of National Communications and BURs on a continuous basis. Of course, formalizing such an institutional arrangement requires financial, technological, and capacity building support.

Eleven Indian institutions implemented the inventory preparation exercise in their area of expertise. Many of these institutions/experts have been part of the inventory preparation exercise since India's Initial National Communication. Various Ministries and Government Departments, Public sector undertakings provided inputs for preparation of the national inventory as illustrated in the figure below.

National Inventory Management System (NIMS)



A dedicated domestic MRV arrangement at the national level is an evolving process.

India has implemented the GEF funded project on "Preparation of Third National Communication (TNC) and other new information to the UNFCCC (NATCOM-3)". While developing the National Communication, the project has addressed the gaps identified in the INC, SNC particularly on capacity building needs, sector-specific data, developing and refining country specific emission/sequestration factors, and developing integrated vulnerability and adaptation frameworks for identified hotspots that are vulnerable to climate change. The project has successfully broadened and consolidated the network of stakeholders, including the researchers, industry, NGOs and the private sector to create a platform for policy interface in key climate change sectors.

The process for development of the NCs and BURs, funded by the GEF and supported by UNDP as an implementing agency, has evolved throughout the years, and significant progress has been noted in the quality of the GHG Inventories (GHGI) both in terms of activity data and emission factors, incorporating quality assurance and control, management of uncertainties, development of mitigation scenarios and modelling of relevant actions and measures. However, the introduction of the MPGs has posed further challenges to the preparation of a follow-up GHG inventory, institutional strengthening, and capacity-building. Even though the ETF provides built-in flexibility to those developing countries that need it owing to their national circumstances; different starting points in institutional capacities; or readiness to fulfil reporting requirements, capacity-building and support from developed country Parties will be crucial to facilitating improvement in reporting over time.

Despite the activities implemented during the development of the NC1, NC2 and NC3, there are some gaps and capacity building needs that must be addressed in India for continuous preparation and reporting of GHG inventory, for climate change impact and vulnerability assessments across sectors and regions, sensitizing the vast Indian population vulnerable to these impacts, adaptation need assessments and their implementation, mitigation actions, and MRV systems. The Mid Term Review of the Third National Communication project held in 2019, provided some key recommendations which have been addressed by the project and will also be considered under the proposed project (4NC+4BUR). The MTR highlighted the need for comprehensive compilation of systematic observations and research on climate change for referencing and long-term ecological studies to understand impacts of climate change on biodiversity and other sectors and establishment of a National Institute for Climate Change Studies and Actions (NICCSA) or a similar Institution. Under the CBIT project establishment of a National Climate Information System (NCIS) is proposed.

Considering India's needs are dynamic and evolving, capacity building will also be a dynamic process to address new needs as they emerge with time. For a developing country like India tracking of financial, technology and capacity building needs are few of the most important issues which guides not only the international negotiations but also the domestic efforts. Due to lack of financial and technological support, India has not been able to fully utilise its potential in terms of tackling climate change. It's important that India should be able to track and communicate its financial and technological capacity needs to the international community through its reporting and therefore a separate component has been outlined in the project document.

To address these identified challenges and gaps, the project intends to prepare India's Fourth National Communication (4NC) and Fourth Biennial Update Report (BUR4) to meet the reporting requirements for non-Annex I countries, and strengthen the institutional and analytical capacities at decentralized level which will eventually enable India to prepare improved climate change adaptation and mitigation strategies, enhanced technology transfer for adaptation and mitigation and sustained institutional capacity for developing future national communications. This will facilitate informed policy-decisions within India, thereby promoting the generation and submission of credible information in a transparent and timely manner to UNFCCC.

Consistency with National Priorities

India has recognised the importance of the global challenge of climate change and has undertaken several steps at the national level as well, which underlines the consistency of the project with the national plans and priorities.

The following actions have been implemented by India in the recent past:

- i. A National Action Plan on Climate Change (NAPCC) has been developed outlining existing and future policies and programs addressing climate mitigation and adaptation.
- ii. At the sub-national level, state governments have been asked to develop state-specific action plans for the agriculture, water, forest, disaster, energy, industry and transport sectors in line with NAPCC. Most of the states have prepared the State Action Plan on Climate Change (SAPCC) but implementation of these action plans on the ground has not yet started.
- iii. India submitted its Nationally Determined Contribution (NDC) to the UNFCCC, outlining the climate actions intended to be taken under the Paris Agreement. India has communicated mitigation and adaptation targets under NDCs and the estimated financial requirements needed to meet its NDCs. India's NDC commitments encompass the areas such as clean energy, industrial energy efficiency, urban centres, waste management, transportation and forestry. The NDC also mentions adaptation actions that cover agriculture, water, health, coastal regions and islands, Himalayan ecosystems, rural livelihoods and forestry.
- iv. India has made substantial investments in weather, climate and environment monitoring.
- v. India has taken a number of new initiatives to meet its voluntary declaration goals to reduce the emission intensity. Some of them are as under;
 - a. Increased solar, wind, hydel power generation: India is implementing one of the largest renewable energy expansion programmes with a target of achieving 450 GW of renewable energy capacity. Towards this goal, in October 2020, India's total renewable energy installed capacity (including hydropower) had reached over 136 GW and the share of renewable energy in electric installed capacity was over 36 percent.
 - b. Pradhan Mantri Ujjwala Yojana" (PMUY: The scheme envisages of smoke free Rural India and aims to benefit 50.0 million families especially the women living below poverty line (BPL) by providing concessional LPG connections to entire nation by 2019. However, the target has been exceeded and as of today, 71.9 million cooking gas connections have been provided to households to enable women to carry out their kitchen work more efficiently and also to reduce GHG emissions through reduced fuelwood consumption.
 - c. Swachh Bharat Mission: Swachh Bharat Abhiyan or Clean India Mission is a country-wide campaign initiated to eliminate open defecation and improve solid waste management. The mission aims at waste disposal by segregation at source and using technologies to compost or make energy.
 - d. Dedicated Freight Corridors (DFC): DFC will help India migrate from diesel propelled freight trains and fossil fuel-based road traffic to electric-powered railway locomotives. Further, double-stack standard shaped containers transported through electric locomotives with trailing loads of 15,000 tonne and trains with 400 containers capacities will help not only reduce transportation cost but also GHG emissions and aerosols.
 - e. Implementation of Bharat Emission Standards for Commercial and passenger vehicles: Bharat stage (BS) emission standards are laid down by the government to regulate the output of air pollutants from internal combustion engine and spark-ignition engine equipment, including motor vehicles. The fourth iteration, BSIV, was introduced in 2017 and the delay between the introduction of BS3 and BS4 resulted in fast-tracking the BSVI emission norms rather than BSV (BS5) norms. From April 2020, while vehicle makers are manufacturing and selling BS-VI (BS6) vehicles and the state governments are only issuing fresh registrations for the same.
- f. National Mission for Enhanced Energy Efficiency (NMEEE): NMEEE consist of initiatives to enhance energy efficiency in energy intensive industries. Perform Achieve and Trade (PAT) scheme for energy efficiency in industries and other energy-intensive sectors launched in 2012, covering 478 designated consumers (DCs), avoided emissions of 92.34 MtCO₂ in PAT Cycle I (2012-13 to 2014-15) and Cycle II (2016-17 to 2018-19).
- g. Afforestation: The 2015 and 2019 assessments by FSI revealed that the Forest and Tree cover has increased by 1.65 per cent. It is estimated that Forest and tree cover sequestered 331 MtCO₂ in 2016 which is around 15 per cent of total carbon dioxide emissions occurring in the country.
- vi. India has successfully prepared its First and Second National Communications and has also prepared its Third National Communication. Since the preparation of its first NC (1NC), the process of development of national communications has resulted in large scale networking, capacity building and

involvement of research organisations and various government departments. The preparation of the 2 previous NCs has led to the development of expert teams for preparation of GHG inventories as well as assessment of impacts, vulnerability, and adaptation.

vii. India also submitted three Biennial Update Reports (2016, 2018 and February 2021).

- a) In the first BUR India reported 2.136 billion tonnes of CO₂ equivalent (tCO₂eq.) greenhouse gases (GHG) in 2010 with the energy sector being the top contributor at 71 per cent.
- b) In the second BUR India reported a total of 2.607 billion tCO₂eq. equivalent of GHGs emissions from all activities (excluding LULUCF). The net national GHG emissions after including LULUCF were 23,06,295 Gg CO₂ equivalent (around 2.306 billion tCO₂eq.). Out of the total emissions, energy sector accounted for 73%, IPPU 8%, agriculture 16% and waste sector 3%. About 12% of emissions were offset by the carbon sink action of forestland, cropland and settlements.
- c) In the third BUR, India reported that in 2016 India's total GHG emissions, excluding Land Use Land-Use Change and Forestry (LULUCF) were 2,838.89 million tCO₂e and including LULUCF it stood at 2,531.07 million tCO₂e. India's emission intensity of gross domestic product (GDP) has reduced by 24 per cent between 2005 and 2016. India is therefore on track to meet its voluntary declaration to reduce the emission intensity of GDP by 20-25 per cent from 2005 levels by 2020.

viii. The FSV held for previous BURs stated, "India reported transparently in its BUR on its national circumstances, institutional arrangements, GHG emissions inventory, mitigations policies relevant to the preparation of its national communications and BURs on a continuous basis." It reported that the government has taken steps towards creating institutional arrangements for the preparation of national communications and BURs on a continuous basis.

ix. Transparency arrangements play a very crucial role to understand the challenges and opportunities towards meeting the long-term temperature goal and to ensure an adequate balance between action and support. In this bid, the developing countries have been accorded built-in flexibilities with the implementation of ETF measures considering their limited capacities and further needs for improvement. A full-sized Project (under GEF 7) on "Capacity-building for establishing an Integrated and Enhanced Transparency Framework for Climate actions and support measures" has been developed for the Government of India. The project objective is to assist India in strengthening and expanding its current technical capacities regarding methodologies and tools to enhance transparency, as outlined in Article 13 of the Paris Agreement. India will complete and enact a consolidated and integrated Monitoring, Reporting, and Verification system improving its ability to effectively define and implement climate change related policies and measures while incorporating a gender-sensitive approach. The project outcomes will focus on the following: a) The nodal ministry (MoEFCC) would be better equipped to lead, plan, coordinate, implement, monitor and evaluate policies, strategies, and programmes to enhance transparency, including communications with states and expert agencies in an effective manner through the implementation of various institutional arrangements and their formalisation as appropriate; b) Bringing all stakeholders together through a web-based National Institutional Coordination System (NICS) to enhance efficiency and transparency with climate reporting; c) Ability to report GHG emission inventories as per IPCC 2006 guidelines (or latest applicable); d) Information to facilitate clarity, transparency, and understanding (ICTU) of NDCs associated with climate actions; e) State focal points submitting information through NICS; f) Developing capacity-retention mechanisms; g) Dissemination of relevant information on GHG inventories and NDC progress through the NCIS; h) Knowledge management and project-related learnings. The 4NC/BUR4 project will complement the CBIT project and will build on its outcomes and outputs and vice versa. The workplans and activities of the 2 projects will be closely coordinated to enhance synergies and avoid overlap.

B. ENABLING ACTIVITY GOALS, OBJECTIVES, AND ACTIVITIES

The proposal should briefly justify and describe the project framework. Identify also key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable. Describe also how the gender equality and women's empowerment are considered in project design and implementation

Description of the changes in the project design:

a) The first two components outlined in the PIF a) Information on national circumstances and b) Institutional arrangements relevant to the preparation of the national reports (4NC and BUR4) have now been merged. It was perceived that separate components will not be required under the FNC. The prevailing conditions and situations at the national and state levels regarding development priorities can well be explained in the context of the existing institutional arrangement. As part of the priorities to deal with the issues related to climate change, the Government of India has taken steps and made efforts towards creating sustainable institutional arrangements outlining existing institutional arrangement. The same institutional arrangement also facilitates the preparation of the National Communications in India. This also fits well with structure of the reporting India follows wherein a dedicated chapter on National Circumstances and Institutional arrangement is earmarked in each BUR and National Communication prepared in the past.

b) A component on finance, technology and capacity building needs and support received has been added in the current elaboration of the PIF towards Project Document. For a developing country like India tracking of financial, technology and capacity building needs are few of the most important issues which guides not only the international negotiations but also the domestic efforts. Due to lack of financial and technological support, India has not been able to fully utilise its potential in terms of tackling climate change. It is considered important that India is able to track and communicate its financial and technological capacity needs to the international community through its reporting and therefore a separate component has been outlined in the project document. Under this component, it is proposed that a technological mapping be conducted on the status of and access to existing technological capacity, along with a review of the best available technologies (how those can be accessed, their costs, etc.). This would generate a better understanding of the need for technology and their efficient allocation. Moving further, a step may be estimating the financial costs of adaptation action in addition to those of acquiring and distributing best technologies. This would allow estimating costs of execution and implementation of proposed plans and analysing their financial viability. Such analysis, would include accounting for both existing domestic and international climate and development funding through proposed projects and policy measures, as well as finance earmarked through national development plans.

c) A component on stakeholder awareness and capacity building, and south-south cooperation has been added in the current elaboration of the PIF towards Project Document. Under the Second and Third National Communications, India took several steps to increase stakeholder awareness and capacity building such as bringing out publications and reports for decision makers and general public. Many publications have been brought out such as CC impacts on agriculture, water resources and disaster management; popular books on climate change mitigation such as Parampara, Green good deeds, Low Carbon Lifestyle and plastics; and Paris Agreement for decision makers. Further, a special train on CC went around the country spreading the word and sensitizing the general people. Also, under this component, the technical, capacity, research, and financial constraints for implementation of State Action Plan on Climate Change (SAPCC) can be assessed and necessary actions taken. Furthermore, India participates in number of meetings organised under the aegis of UNFCCC,

IPCC, and other multi-lateral/bi-lateral fora. India's achievements, lessons learnt and best practices maybe shared at the meeting and fora for which a separate Outcome and outputs thereunder has been envisaged for strengthening South-South Cooperation. It was felt that a dedicated component and outcomes would help better monitoring and highlighting the achievements of the country at a global level.

The proposed alternative scenario with a brief description of expected outcomes and components of the project

The proposed project intends to prepare India's Fourth National Communication (4NC) and Fourth Biennial Update Report (BUR4). It would enable India to meet the obligations under the UNFCCC as well as address and communicate global climate change related concerns, in particular on mitigation, adaptation, and technology transfer. The project will strengthen and update the information on national circumstances and the institutional arrangements and capacities related to climate change policy and development in India. In addition, the project will improve the GHG inventory through the use of activity data of better quality and higher tier methodologies for key categories in the country. It will aim to improve assessments on climate change vulnerability, impacts, adaptation plans and climate projections based on the latest Multiple Global climate models (GCM)/Regional Climate Models (RCMs) and increase the understanding of GHG mitigation policies and measures (PAMs) and the related gaps and constraints. These activities will support India in compiling and submitting its 4NC and BUR4 to the UNFCCC and will ultimately allow India to monitor the shift to a low carbon, more resilient and sustainable development pathway, keeping in mind the primary goals of economic development and conservation of environment and natural resources.

The 4NC/BUR4 project will build on findings and recommendations from previous NC and BUR work, as well as recommendations resulting from the International Consultation Analysis (ICA) process for BURs. The ICA process consists of two steps, namely first the technical analysis (TA) of non-Annex I Parties' BURs by teams of technical experts (TTE), resulting in a summary report for each Party, and secondly the facility sharing of views (FSV), to which the BURs and summary reports serve as input. The First Biennial Update report of India underwent the ICA process in 2017 and the Second Biennial Update Report in 2019, with the TA report completed and published on the UNFCCC website on 2 October 2019 and the FSV held in December 2019. India's Third Biennial Update Report, which was submitted on 20 February 2021, has completed the ICA process in January 2022.

Active participation in the ICA cycles, the technical analysis of the submitted BURs, and the workshop for FSV under the Subsidiary Body for Implementation, has been valuable and a positive experience for India. During the Technical Analysis of BUR2, the following were the key capacity-building needs identified in consultation of the TTE with India:

- a) GHG inventory preparation:
 - i) Estimating and reporting HFC, PFC and SF6 emissions from, for example, air conditioning and refrigeration and the electronics industry and electrical equipment.
 - ii) Estimating and reporting CO, NOX, NMVOC and SOX emissions.
 - iii) Training on verification techniques for the reported emissions of key source categories.
 - iv) Establishing a long-term institutional and operational system for periodic, continuous, and enhanced GHG emission estimation for national reporting under various UNFCCC reporting requirements (i.e., a national inventory management system).
 - v) Enhancing the GHG inventory by migrating to higher-tier levels in all sectors.
 - vi) Modelling for tier 3 estimation of emissions and removals in the LULUCF sector.
- b) Mitigation actions and their effects:

- i) Enhancing capacity for assessing and quantifying the impacts of mitigation actions at the state level.
- ii) Enhancing capacity for developing mitigation actions in the waste sector and assessing and quantifying their impacts.
- iii) Enhancing capacity for collecting data that would enable the calculation of the results achieved in terms of benefits of mitigation actions under the national afforestation programme, the Compensatory Afforestation Fund Management and Planning Authority bill, and the Nagar Van Udyan Yojana initiative.
- iv) Establishing an integrated domestic MRV system with associated data management system for tracking emissions, mitigation actions and support (climate finance, technology transfer and capacity-building). In addition, enhancing technical capacity for developing the requisite tools (e.g., procedures, guidelines, rules) for MRV, where applicable.

The Technical Analysis of BUR-3 was conducted in August 2021. The Team of Technical Experts (TTE) during the ICA process of the Third BUR (BUR-3) identified the capacity-building needs related to the facilitation of the preparation of subsequent national communications on estimating and reporting of GHG inventories, which are related to:

- i) Enhancing capacity to estimate and report CO, NOX and NMVOC emissions;
- ii) Enhancing the technical capacity to calculate consistent time series, especially for the LULUCF sector;
- iii) Estimating and reporting HFC, PFC and SF6 emissions from, for example, air conditioning and refrigeration and the electronics industry and electrical equipment;
- iv) Enhancing capacity to develop mitigation actions in the waste sector and assessing and quantifying their impacts;
- v) Establishing a long-term institutional and operational system for periodic, continuous and enhanced GHG emission estimation for national reporting under UNFCCC reporting requirements.

The capacity-building needs expressed by India through the national reporting process to the Convention since 2004 are still relevant but remain mostly unmet and continue to multiply. Therefore, capacity-building needs expressed in previous NCs and BURs should be considered in conjunction with the capacity building needs identified by India and the ICA process of its First, Second and Third BUR.

The following list provides the main areas that the 4NC/BUR4 project will address:

- a) GHG inventory preparation: establishing a sustainable GHG management system, collecting, and improving activity data (AD), and improving and moving to higher tiers of EFs.
- b) Mitigation: informing on the design and implementation of afforestation and reforestation projects.
- c) Adaptation: conducting impact and vulnerability assessments and implementing them at the sectoral, subregional, and integrated level, and sensitizing the Indian population vulnerable to the adverse impacts of climate change.
- d) Technology transfer: providing training and upgrading skills for personnel across sectors for improving technology and tracking technology transfer received.

The preparation of the 4NC and BUR4 will cover technology assessment, technology identification and prioritisation, adaptation to local context and diffusion, preparation of detailed GHG emission inventories and implementing improvement plans to increase their quality. A significant upgrade of capacity in this context remains one of the foremost challenges and will be addressed by the CBIT project in coordination with the 4NC and BUR4 project.

The recommendations from the review of the BUR2 and BUR3 within the ICA cycles shall be taken into consideration while implementing the 4NC/BUR4, and the compliance shall be presented in future reports.

The project is structured around the following seven components, which have related outcomes and outputs designed to achieve the objective of the project:

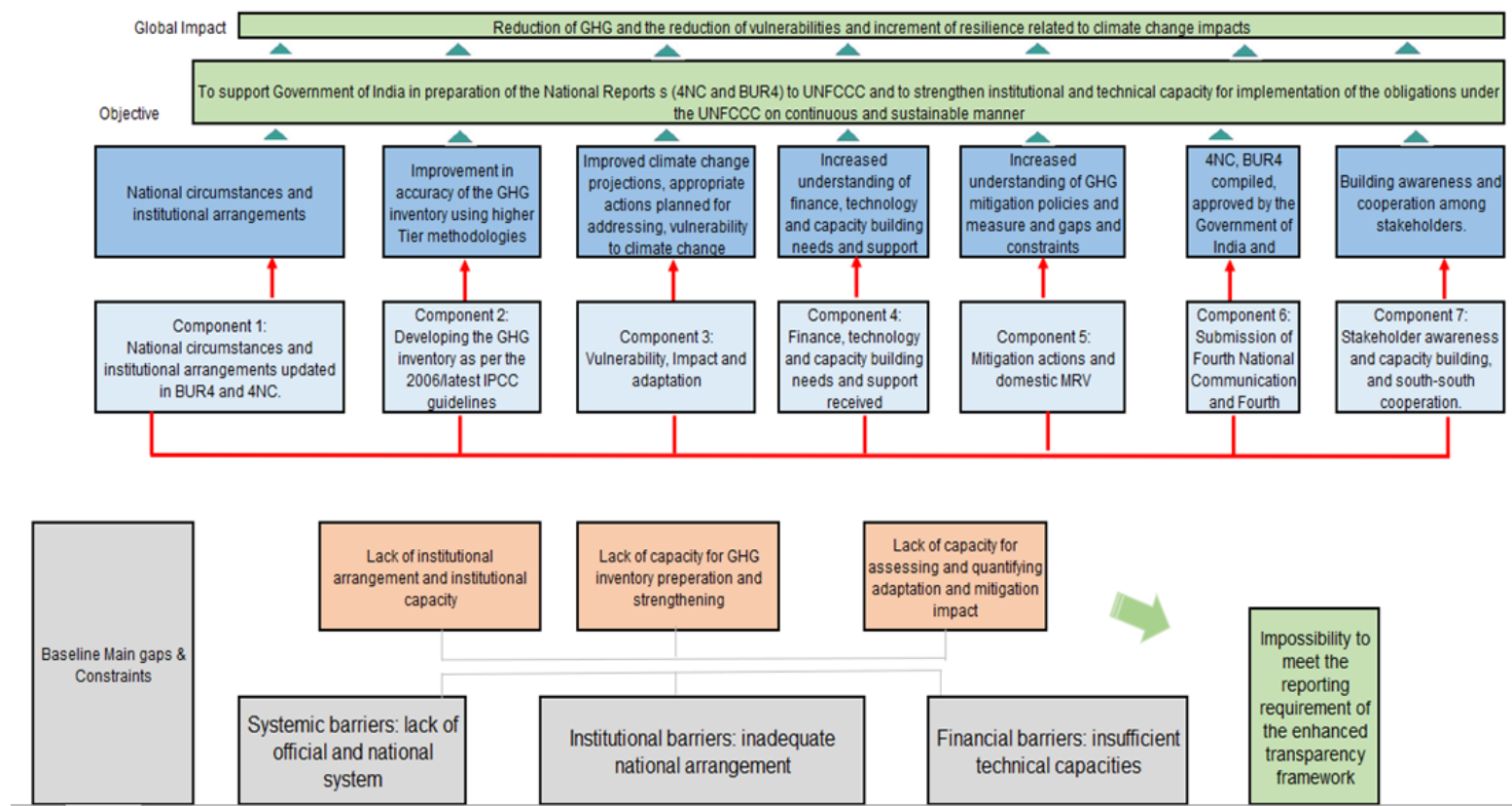
1. NATIONAL CIRCUMSTANCES AND INSTITUTIONAL ARRANGEMENTS UPDATED IN BUR4 AND 4NC.
2. DEVELOPING GHG INVENTORY AS PER 2006 IPCC GUIDELINES.
3. IMPACT, VULNERABILITY AND ADAPTATION
4. FINANCE, TECHNOLOGY AND CAPACITY BUILDING NEEDS AND SUPPORT RECEIVED
5. MITIGATION ACTIONS AND DOMESTIC MRV
6. PREPARATION OF FOURTH BIENNIAL UPDATE REPORT AND FOURTH NATIONAL COMMUNICATION FOR SUBMISSION TO THE UNFCCC, KNOWLEDGE MANAGEMENT, MONITORING AND EVALUATION
7. STAKEHOLDER AWARENESS AND CAPACITY BUILDING, AND SOUTH-SOUTH COOPERATION.

The implementation of project activities by India is expected to generate global environmental benefits through the reduction of GHG emissions as well as the reduction of vulnerabilities and increment of resilience related to climate change impacts. The project will strengthen institutional and analytical capacities at decentralized level and facilitate informed policy-decisions within India which will eventually enable India to prepare improved climate change adaptation and mitigation strategies, enhanced technology transfer for adaptation and mitigation, and sustained institutional capacity for improving future national communications. This will ensure development of a more robust, transparent and sustainable system, which will facilitate the management of data and information on climate change mitigation and adaptation.

The expected outcomes of this project can serve as important inputs to a better understanding of mitigation and adaptation challenges in India. The inventory of GHG sources and sinks, can also lead to more efficient policies, new legislations at federal and state levels. Therefore, the project has the potential to assist the country in moving towards less carbon-intensive, more resilient and more sustainable energy consumption paths and will promote the generation and submission of credible information in a transparent and timely manner to the UNFCCC.

The following figure illustrates the strategy and the theory of change of the project, highlighting the main constraints and gaps in India for the preparation of India's 4NC and BUR4 and how the project outcomes will address this.

Figure 1. Illustration of the theory of change of the project.



This project will conform to the GEF operational program on “Enabling Activity” (EA), which pertains to the GEF Focal Area on “Climate Change”. Enabling Activity support is provided for activities related to the preparation of National Communication and Biennial Update reports to the United Nations Framework Convention on Climate Change (UNFCCC) as per their obligations under Articles 4.1 and 12.1 of the UNFCCC. The priority areas that the project will focus on will be drawn from the tenets of the Convention to which India is a Party and the latest Guidelines for preparation of National Communication for non-Annex I Parties (17/CP.8) enabling India to report National Communications to the UNFCCC on a continuous basis.

The institutional and analytical capacities developed under this project will be fully linked to many of the ongoing efforts in India aimed at promoting mitigation and adaptation strategies, and consistent with the NDCs. The 4NC and BUR4 will be prepared involving all the relevant ministries and a large network of national institutions spread across India. The project will build synergies with the Capacity Building Initiative on Transparency (CBIT) project and will support the gaps being addressed under the CBIT project for compliance with the ETF framework and identify suitable measures for better preparedness of India on transparent information sharing. The 4NC/BUR4 project will benefit from the enhanced capacity built through the CBIT project to reflect achievement of emission reductions as per the latest IPCC Guidelines. The CBIT project will also support the 4NC/BUR4 project by developing tools, templates, and training for agencies and experts involved in the inventory process and in the mitigation actions implementation and tracking. In addition, the 4NC/BUR4 will benefit from the pool of trainers created by CBIT (with more participation of women) on various aspects of national reporting. The project will benefit from the IT-enabled system (NICS) that will be developed by the CBIT project to govern interaction between relevant stakeholders in a coordinated and

timely manner for effective and timely national reporting and the 4NC and BUR4 will be disseminated through the National Climate Information System (NCIS) developed by the CBIT project.

Although no direct environmental benefits are associated with this enabling activity, the project activities will generate indirect local, national, and global environmental benefits by generating information and knowledge on climate change, in particular on GHG emissions to assist in developing mitigation and on climate impact assessments to assist in adaptation strategies that enhance the resilience of natural and socio-economic systems.

Stakeholders

The stakeholders of the project include the scientific community from research institutions such as universities, the institutions of the Ministry of Earth Sciences (MoES), Ministry of Science and Technology institutes such as the Council of Scientific and Industrial Research (CSIR), the Indian Council for Agricultural Research of the Ministry of Agriculture, and the Indian Institutes of Science (IISC), Indian Institutes of Management (IIMs) and Indian Institutes of Technology (IITs). In addition, the line Ministries and Government Departments relevant for climate change mitigation and adaptation at the state level, and district and local level decision making bodies (Panchayati Raj Institutions) will be involved in the process. These Ministries and Government Departments will mainly be responsible for providing information and data related to their respective area of expertise for the successful implementation of the project outputs. Participation will also be sought from other stakeholders including civil society groups, community-based organizations, and other policymakers as appropriate. The following table presents the stakeholder engagement plan of the project.

Stakeholder	Key Function	Project Engagement and Specified Roles
Ministry of Environment, Forest and Climate Change (MoEFCC)	Nodal ministry under the Government of India for coordination and management of climate change related programmes, actions, and National Communication/BUR to UNFCCC.	<ul style="list-style-type: none"> The MoEFCC will be better equipped to provide information for the chapters related to National Communication, GHG emissions from LULUCF and Forestry.
State Focal Points	To prepare state-level action plans by extending and complementing national action plans on climate change. To report state priorities to the MoEFCC through the State Action Plan on Climate Change (SAPCC).	<ul style="list-style-type: none"> They will continue to act as a state level focal point. They will provide relevant inputs to MoEFCC through the proposed national coordination system. They will also report capacity related challenges, gaps, and associated needs.
Ministry of Coal (MoC)	Provide official information on the production and supplies of coal across the end-use sectors primarily at the national level.	<ul style="list-style-type: none"> They will continue data collection and support analysis on inventories and mitigation.
Ministry of Petroleum and Natural Gas (MoPNG)	Provide official information on the production and supplies of liquid and gaseous fuels across the end-use sectors primarily at the national level.	
Sectoral Focal Points comprised of subject specific ministry/public departments	Provide official information on the end-use consumption of energy and progress with sector specific mitigation/adaptation targets.	<ul style="list-style-type: none"> They will support the implementation of mitigation and adaptation activities related to building capacity towards improved monitoring, reporting, and verification of information.
Academic and Research centres, Laboratories of the institutions of the Ministry of Earth Sciences (MoES), the Council of Scientific and Industrial Research (CSIR), the Indian Council for Agricultural Research of the Ministry of Agriculture, the Indian Institutes of Science (IISc), the Indian Institutes of Technology (IITs), and the Indian Institutes of Management (IIMS)	Conduct scientific studies and assist in improvement of measuring and tracking emissions through various sources. Example: Central Institute of Mining and Fuel Research (CIMFR), National Environmental Engineering Research Institute (NEERI), Technology Information Forecasting and Assessment Council.	<ul style="list-style-type: none"> They will strengthen institutional capacity towards monitoring, reporting, and verifying progress with emission tracking. Updating emission factors and other parameters on a periodic basis. Developing capacity to report at tier-III level of GHG inventories.
National Institution for Transforming India (NITI Aayog)	NITI Aayog India has been entrusted with the nodal role of overseeing the implementation of the 2030 development agenda for Sustainable Development Goals (SDGs)	<ul style="list-style-type: none"> They will assist in evaluating cross-sectoral policies through the lens of sustainable development and climate change goals.

Primary Goals (SDGs).

Ministry of Statistics and Programme Implementation (MoSPI)	The Ministry of Statistics and Programme Implementation covers quality aspects of statistics released in the country.	<ul style="list-style-type: none"> · They will provide data sets based on current data, after applying standard statistical techniques for assessments.
Non-governmental Organisations (NGOs)	Conducting independent assessment of government policies and schemes and suggesting improvement measures. This will include NGOs in the field of climate change and gender-focused NGOs. Some of these NGOs are, amongst others, TERI, CEEW (GHG Platform India), CSTEP, WRI, IORA Ecological Solutions, Development Alternatives, and IRADe.	<ul style="list-style-type: none"> · They will find representation through proposed lead agencies and experts. · Their capacity would further boost the climate reporting process.
Private sector (Industry and/or Industry associations)	They play a very crucial role in the overall economic, social, and environmental ecosystem of the country. They are the ultimate point source of information and bringing innovative reforms towards deep decarbonisation.	<ul style="list-style-type: none"> · They will find adequate coordination with the state focal point, sectoral focal points, lead agencies, MoEFCC and other relevant stakeholders for information management and assessment of mitigation potential through technology and process reforms.
Local and indigenous Community	Represent rural and vulnerable population of India whose livelihood will be impacted due to adversities of climate change	<ul style="list-style-type: none"> · Their involvement and sensitisation would ensure smooth functioning and improvement with data collection.

Learning opportunities and technology transfer from peer countries will be further explored during project implementation. To present opportunities for replication in other countries, the project will codify good practices and facilitate dissemination through global ongoing South-South and global platforms, such as the CBIT Global Coordination Platform.

In addition, to bring the voice of India to global and regional fora, the project will explore opportunities for meaningful participation in specific events where UNDP could support engagement with the global development discourse on capacity-building for the preparation of national reports. The project will furthermore provide opportunities for regional cooperation with countries that are implementing initiatives on National Communications and Biennial Update Reports in geopolitical, social and environmental contexts relevant to the proposed project in India.

Gender Equality and Women's Empowerment.

A comprehensive and in-depth Gender Analysis and Gender Action Plan for India, including a discussion of climate-related findings and gender activities, is provided in Annex 10 of the accompanying UNDP Project Document.

The update of the national circumstances chapter of the 4NC/BUR4 will consider gender-disaggregated data where possible in order to better understand how the different roles of men and women in social and economic circumstances may affect India's ability to deal with climate change.

Therefore, the project will be a meaningful entry point for awareness-raising and capacity-building for ensuring equal engagement in and benefit from climate change actions for both men and women. It will support to understand how both men and women are involved in managing their environments, and it will clarify the overall picture of the effects of climate change on different groups of citizens, which will increase transparency.

In terms of the overall project approach, it will use the guidance and align its activities with the following international guidelines:

- - UNFCCC Gender Action Plan^[1]
- - Guidance to advance gender equality in GEF projects and programs^[2]
- - Gender Responsive National Communications Toolkit^[3]

[1] https://unfccc.int/sites/default/files/resource/cp2019_13a01E.pdf

[2] http://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.C.54.Inf_.05_Guidance_Gender_0.pdf

[3] <http://www.un-gsp.org/news/gender-responsive-national-communications-toolkit>

The project will recruit a gender specialist to finalize the gender analysis and gender action plan and develop gender responsive results-based framework and monitor the implementation of the developed gender action plan. The engagement strategy for women and vulnerable groups will be designed to ensure gender and vulnerable community dimensions are adequately addressed. The gender analysis will also follow the structure of the five priority areas of the UNFCCC Gender Action, which are:

- i. Capacity building, knowledge sharing and communication: To enhance the systematic integration of gender considerations into climate policy and action and the application of understanding and expertise to the actions called for under the Lima work programme on gender and its gender action plan, and facilitate outreach, knowledge-sharing and the communication of activities undertaken to enhance gender-responsive climate action and its impacts in advancing women's leadership, achieving gender equality and ensuring effective climate action.
- ii. Gender balance, participation, and women's leadership: To achieve and sustain the full, equal and meaningful participation of women in the UNFCCC process.
- iii. Coherence: To strengthen the integration of gender considerations within the work of UNFCCC constituted bodies, the secretariat and other United Nations entities and stakeholders towards the consistent implementation of gender-related mandates and activities.
- iv. Gender responsive implementation and means of implementation: To ensure the respect, promotion and consideration of gender equality and the empowerment of women in the implementation of the Convention and the Paris Agreement.
- v. Monitoring and reporting: To improve tracking of the implementation of and reporting on gender-related mandates under the Lima work programme on gender and its gender action plan.

An initial stocktaking and gender analysis across all areas, incorporating stakeholders who understand gender issues in relation to their related sectors, will be conducted in the course of the 4NC/BUR4 project preparation, to assess and understand where deeper analysis and action is required to ensure that the overall NC/BUR reports are more credible, realistic and sustainable.

More specifically, the project's technical work, which is aimed at strengthening institutional and analytical capacities at decentralized level and facilitate informed policy-decisions, improving the understanding of mitigation and adaptation challenges in India, and improving the quality, continuity, and availability of the national GHG inventory, will benefit both men and women alike. The updated information on national circumstances will examine India's development priorities, policies, and programmes with a focus on gender aspects related to climate change (Output 1.1.1.). In addition, a gender balanced institutional structure relevant to conducting research/ systematic observation and collecting, collating and analysing data for preparation of BUR4 and 4NC will be established (Output 1.2.1). The project will also undertake an improved assessment and provide projections of climate change impacts and vulnerability related to gender (Output 3.1.3).

Gender Action Plan

This Gender Action plan provides suggested entry points for gender-responsive actions to be taken under each of the activity areas of the project. In addition, specific indicators are also proposed to measure and track progress on these actions at the activity level. This can be incorporated into the detailed M&E plan which will be developed at the start of implementation and provides concrete recommendations on how to ensure gender (including disaggregated data) continues to be collected and measured throughout implementation.

Objective	Action	Indicator
Component 1: NATIONAL CIRCUMSTANCES AND INSTITUTIONAL ARRANGEMENTS UPDATED IN BUR4 AND 4NC.		
Inclusion of gender considerations in the update of India's climate change related policy framework and information on national circumstances.	<p>Develop a gender inclusion strategy at the project inception stage.</p> <p>Ensure that data collection is sex disaggregated.</p> <p>Ensure that addressing gender equality is not perceived as an additional task, but instead included in the standard activities.</p> <p>Integrate gender-specific indicators in the national development priorities, policies, and programmes.</p> <p>Identify and include gender-focused NGO's and institutions in the data collection and disaggregation activities.</p>	<p>Percentage of men and women in the selection of consultants for required work.</p> <p>Level of gender disaggregated data in the country's development priorities, policies, and programmes.</p> <p>Level of gender disaggregated information in the chapter on national circumstances.</p> <p>Number of gender-related national documents reviewed during the process.</p>
Component 2: DEVELOPING GHG INVENTORY AS PER 2006 IPCC GUIDELINES.		
The need for gender-disaggregated data and indicators to ensure inclusion of gender issues in the GHG inventory processes.	<p>Create a "how-to" checklist on engendering the inventory process.</p> <p>Establish a gender baseline in which to measure improvements and identify areas of focus.</p> <p>Ensure that data collection is sex disaggregated.</p>	<p>Percentage of men and women in the selection of consultants for required work.</p> <p>Percentage of men and women participants in the GHG inventory activities.</p> <p>Number of gender-sensitive tools developed during the GHG inventory process.</p>

		Identified gender gaps throughout the GHG inventory processes.
Component 3: IMPACT, VULNERABILITY AND ADAPTATION		
Gender-disaggregated results in the climate change projections and models at both the state and national level.	<p>Identify and include gender-based capacities on climate solutions.</p> <p>Development of gender indicators in the climate models and projections.</p> <p>Vulnerability assessment for vulnerable groups in the country.</p>	<p>Percentage of men and women in the selection of consultants for required work.</p> <p>List of gender sensitive indicators for the climate projections.</p>
Component 4. FINANCE, TECHNOLOGY AND CAPACITY BUILDING NEEDS AND SUPPORT RECEIVED		
Ensure participation and active involvement of both men and women throughout the strengthening of the institutional capacities.	<p>Create a “how-to” checklist on engendering the inventory process.</p> <p>Analysis of the gender related constraints at the national Ministries related to the inventory process.</p> <p>Monitor proportion of representation and specific contributions of women in training activities.</p> <p>Governmental staff will be required to take the UN course on gender and environment.</p> <p>Design and implement awareness and knowledge management programs for women, men and youth.</p>	<p>Percentage of men and women in the selection of consultants for required work.</p> <p>Ensuring that a minimum percentage of beneficiaries of the institutional strengthening activities are women.</p> <p>Number of men and women considered in the institutional structure for the periodic conduct of the GHG inventory.</p>
Component 5. MITIGATION ACTIONS AND DOMESTIC MRV		

Inclusion of gender considerations in the development of GHG mitigation policies and measures.	<p>Identify and include gender-based capacities on climate solutions.</p> <p>Gender-disaggregated data related to the sector-wise mitigation policies and measures.</p> <p>· Establish accountability systems to measure gender equality in the MRV system.</p> <p>Invite gender-focused NGO's and institutions in the MRV process.</p>	<p>Percentage of men and women in the selection of consultants for required work.</p> <p>Gender indicators in the national and state level climate change mitigation plans.</p> <p>Percentage of men and women participating in the capacity building events.</p> <p>Examples of gender gaps in the technology transfer arrangements.</p>
Component 6. PREPARATION OF FOURTH BIENNIAL UPDATE REPORT AND FOURTH NATIONAL COMMUNICATION FOR SUBMISSION TO THE UNFCCC, KNOWLEDGE MANAGEMENT, MONITORING AND EVALUATION		
Design and implement awareness and knowledge management programs on the issues of gender inequality.	<p>Design gender related disseminated technical reports.</p> <p>Implement gender awareness and knowledge sharing programs for women, men, and youth.</p>	<p>Percentage of men and women in the selection of consultants for required work.</p> <p>Number of available national gender experts.</p> <p>Number of integrated gender-disaggregated indicators in the project reports.</p>

Private Sector Engagement

Private sector organisations such as Confederation of Indian Industries and Federation of Indian Chambers of Commerce & Industry actively participated in the NATCOM-3 project by helping collect information regarding IPPU sector and also as the interface between the industries and the government. Their role in the NATCOM-4 project is expected to continue with additional responsibilities. The private sector will play a crucial role in the project as the ultimate point source of information and bringing innovative reforms towards deep decarbonization. They will find adequate coordination with the state focal point, sectoral

focal points, lead agencies, the MoEFCC and other relevant stakeholders for information management and assessment of mitigation potential through technology and process reforms.

Knowledge Management

The project team will ensure extraction and dissemination of lessons learned and good practices also in relation to mainstreaming gender equality considerations in climate action to enable adaptive management and upscaling or replication at local and global scales. Results will be disseminated to targeted audiences through relevant information sharing fora and networks. The project will contribute to scientific, policy-based and/or any other networks as appropriate (e.g., by providing content, and/or enabling participation of stakeholders/beneficiaries including women). The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

Risks

The following table summarises the main anticipated project-related risks:

Risk	Type of Risk	Risk Category	Prevention and/or Mitigation Approach
Delay in project implementation due to operational challenges	Operational	M	This can lead to the delay in implementation of activities which can have a cascading effects of project activities. To address this risk, some of the project activities will factor in buffer time to accommodate the delays, without jeopardizing the implementation of activities and overall project timeline. In addition, detailed work plans along with the scope of the work for each activity will be defined, which will reduce the chance for operational challenges.
Lack of cooperation from state governments, industries, municipalities, the private sector, and other stakeholders	Technical	L	Periodic stakeholder consultations at regional and state level will be conducted to ensure cooperation and participation and enhance awareness on the importance of climate change. The line ministries and government departments that are most concerned with different elements of information are included in the National Steering Committee to ensure their cooperation.
The advanced models based on Multiple Global climate models (GCM) / Regional Climate Models (RCMs) and climate change parameters at RCM grid level using CORDEX data may	Technical	L	The project will support the Government of India to develop and apply these advanced models, however, if this is unsuccessful or delayed, statistical downscaling will be adopted to generate downscaled climate projections using less-refined models.

take more time or are not successful within the project timeframe.			
Lack of institutional and inter-institutional coordination and capacity	Institutional	M	Regular interactions and engagements through individual and group meetings of nodal officers of the institution will be carried out by the project management unit and technical advisory group to build inter institutional coordination and capacity.
Lack in the number of women involved in the project	Gender	L	The project encourages equal participation of men and women and has been designed to ensure equal participation in project activities. It has developed a Gender Action Plan, which will be implemented under the supervision of the gender specialist.

A detailed risk register is available under Annex 7 and the SESP under Annex 6 of the project document.

Due to the continuous evolution of the COVID-19 pandemic and its already observed and potential consequences on project design and implementation, the risks, response measures, and opportunities related to COVID-19 are addressed separately, as described hereby.

COVID-19 Risk Analysis, Response Measures, and Opportunities

Risk Analysis and Response Measures

The COVID-19 pandemic poses a risk to several aspects of the project design and implementation. The key risks are related to the capacity and changes in timelines, stakeholder engagement processes, and enabling environment. The main identified risks, and the response measure considered in the project are presented in the following table.

Table 3. COVID-19 related risks and corresponding response measures.

Covid-19 Related Risk		Response Measure
Availability of technical expertise, capacity, and changes in timelines	Training and knowledge management activities cannot be held due to restrictions	A combination of remote/online/virtual and digital-based guidance by international experts and utilization of national experts will be used to ensure the implementation of the activities. Activities related to knowledge management and possible exchanges will adhere to UNDP guidance on travel and precautions related to containment of the COVID-19 global pandemic, and the project will develop virtual or on-line activities to support these exchanges where possible. The same modalities will be employed when technical trainings are not possible in person.
	Limited capacity and experience for remote work and online interactions affect the effectiveness of the interventions	The development of guidelines, templates and manuals for each output developed within the project will ensure the outputs of the project can be used beyond project implementation and will allow the staff to access the detailed information, ensuring the sustainability of the work and reinforcing the institutional capacity of the institutions involved.
	Delays in project implementation	Most activities and events will be organized and conducted using virtual platforms to ensure that any COVID-19 related limitations will be dealt with in a timely manner. Also, the project will leverage learning from other projects to deal with situations like COVID pandemic to plan delivery activities in multiple ways without impacting the timeline.
Availability of data and information	There could be delays in getting demographic data (Census 2021) due to restrictions	The Census 2011 data may be used after projections. Also, the new census is delayed with preliminary results expected in 2023–24. So the data may be available for

	s in training staff and data collection.	or at least one report if not both.
Stakeholder Engagement Process	Mobility of stakeholders and staff is affected	The project design has considered steps to minimize these risks such as limiting travel to or from areas where COVID-19 is prevalent, and will also provide training on regular hand washing, social distancing and wearing masks in public for the project staff and stakeholders. These trainings will be repeated throughout the project implementation and reinforced during settings where it is determined to be high risks areas.
	Highly vulnerable actors and typically marginalized groups are not involved in project implementation	
Enabling Environment	Government priorities change because of the pandemic	The high-level involvement and commitment of national stakeholders shown in the PPG reaffirms the interest of the country and ensures the project implementation is country driven. The design of the project activities, prioritizing the use of virtual platforms, will allow stakeholders to continue with their involvement in potential lockdown phases.
Financing	Price increase in procurement	The possibilities for developing the work virtually ensure that the demand for procurement is sufficient to meet the project requirements in a cost-effective way.

Opportunity Analysis

Although indirectly, most of the activities to achieve the project results are likely to have a bearing on COVID-19 efforts. The project will provide result in improved institutional arrangements, strengthened institutional and technical capacities of climate information and improved understanding of mitigation and adaptation challenges in India, which will all consider the COVID-19 pandemic related risks. The improved national GHG inventory through capacity building activities will also touch upon the risks and assumptions based on the socio-economic impacts of COVID-19.

A positive impact from the COVID-19 pandemic is the opportunity to slowly introduce e-governance (online public service provision and delivery without physical interactions) over time, enabling service provisions in both rural and urban areas.

Given the fact that the underlying principle of this is to cut emissions, COVID-19 is likely to have environmental and development benefits at the appropriate scale. Given the need of practicing social distancing, COVID-19 is likely to introduce policy changes to many global meetings and conferences including those of the UNFCCC, GEF, CBD, UNCCD and employed innovative and digital modalities to be conduct these meetings. However, with improving situation, global meetings are now being conducted in person like COP26 and COP27. The project will assess the situation and guidelines issued by the national Government on a continuous basis to take decisions on mode of the meetings in advance.

C. DESCRIBE THE ENABLING ACTIVITY AND INSTITUTIONAL FRAMEWORK FOR PROJECT IMPLEMENTATION

Discuss the work intended to be undertaken and the output expected from each activity as outlined in Table A

The Executing Entity for this project is the Ministry of Environment, Forest and Climate Change (MoEFCC).

The Executing Entity is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document.

The Executing Entity is responsible for executing this project. Specific tasks include:

- Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Executing Entity will strive to ensure project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used and generated by the project supports national systems.
- Overseeing the management of project risks as included in this project document and new risks that may emerge during project implementation.
- Procurement of goods and services, including human resources.
- Financial management, including overseeing financial expenditures against project budgets.
- Approving and signing the multiyear workplan.
- Approving and signing the combined delivery report at the end of the year.
- Signing the financial report or the funding authorization and certificate of expenditures.

For the preparation of National Communications and Biennial Update Reports on a continuous basis, the Government of India has taken steps and made efforts towards creating sustainable institutional arrangements. Preparation of the NC and BUR required comprehensive study, technical as well as administrative arrangements and stakeholder's participation in various tasks and activities. To ensure adequate attention and participation, a National Steering Committee (NSC) under the chairmanship of the Secretary of the MoEFCC is in place that oversees the preparation and implementation of the work programme of the NC and BUR. The line ministries and government departments that are most concerned with different elements of information are represented in the National Steering Committee.

For the preparation of the NCs and BURs, the MoEFCC established a National Communication/NATCOM Cell that will support the National Project Director in the compilation of information for the National Communications and Biennial Update Reports. The institutional structure for this project will follow the same institutional arrangements as for the previous project on the Third National Communication.

The project will follow standard UNDP – GEF guidelines for monitoring and evaluation and in addition, the requirements of the implementing agency. Hence, regular reporting at the intended intervals, an independent Mid-Term Review (MTR) at the mid-point of project period for determining the project's progress being made toward the achievement of its outcomes, will be part of the process. An independent Terminal Evaluation (TE) will take place three months prior to

the operational closure and will be undertaken, again in accordance with UNDP and GEF guidance policies. The TE will focus on the delivery of the project's results as initially planned (and as corrected after the MTR, if any such correction took place).

Responsible Parties: N/A

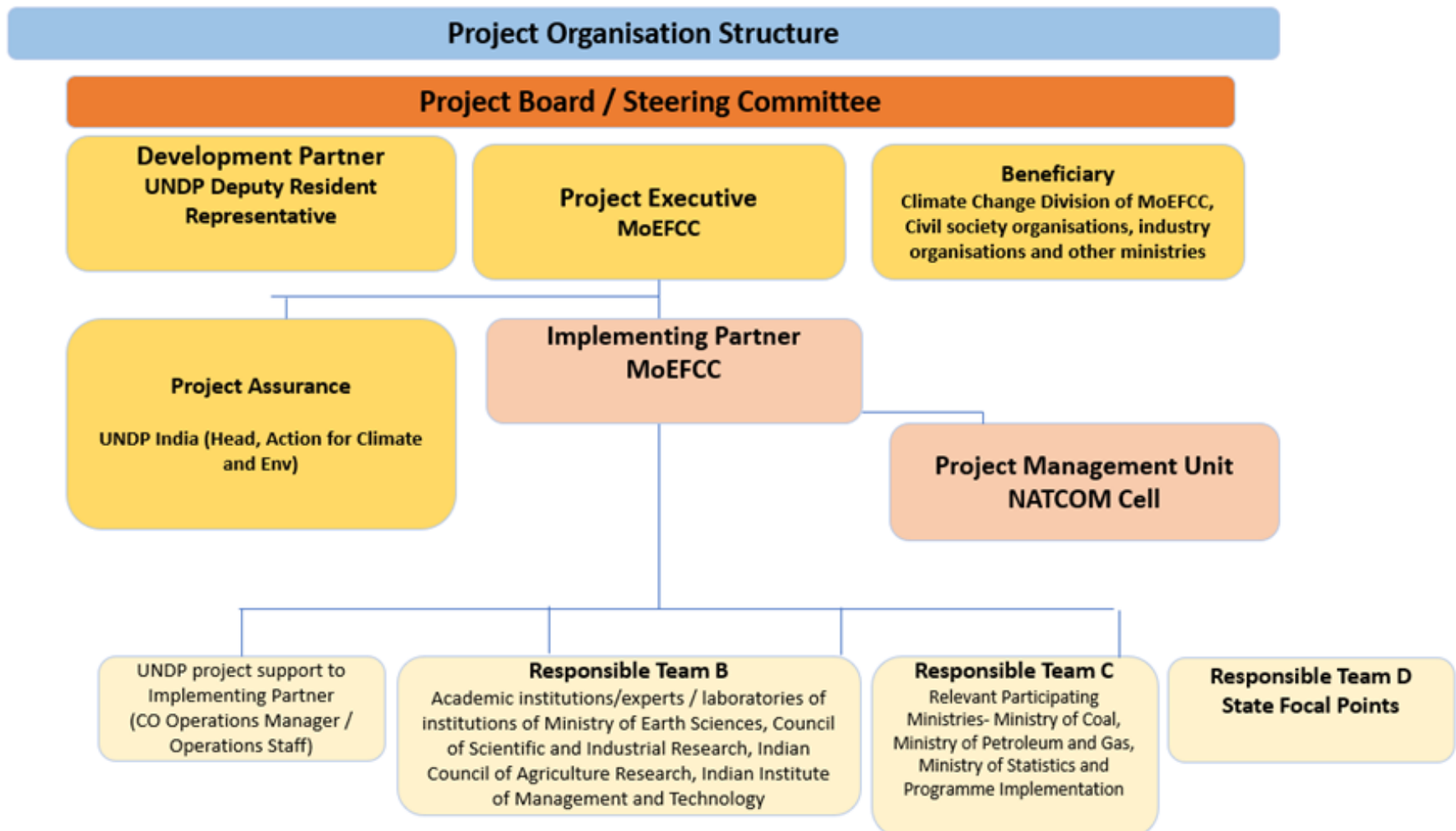
Project stakeholders and target groups: Please refer to the Stakeholder Engagement Plan under Annex 9 of the accompanying project document.

UNDP

UNDP is accountable to the GEF for the implementation of this project. This includes oversight of project execution undertaken by the Executing Entity to ensure that the project is being carried out in accordance with UNDP and GEF policies and procedures and the standards and provisions outlined in the Delegation of Authority (DOA) letter for this project. **The UNDP GEF Executive Coordinator, in consultation with UNDP Bureaus and the Executing Entity, retains the right to revoke the project DOA, suspend or cancel this GEF project.** UNDP is responsible for the Project Assurance function in the project governance structure and presents to the National Steering Committee and attends National Steering Committee meetings as a non-voting member.

A firewall will be maintained between the delivery of project oversight and quality assurance performed by UNDP and charged to the GEF Fee and any support to project execution performed by UNDP (as requested by the Executing Entity) and may be charged to the GEF project management costs (only if approved by GEF). The segregation of functions and firewall provisions for UNDP in this case is described in the next section.

Project Organisation Structure



First line of defense

- UNDP oversight of project support to the Executing Entity cannot be UNDP staff providing project assurance or providing programmatic oversight support to the RR.

Second line of defense

- Regional Bureau oversees RR and Country Office compliance at portfolio level.
- BPPS NCE RTA oversees technical quality assurance and GEF compliance. BBPS NCE PTA oversees RTA function.
- UNDP NCE Executive Coordinator and Regional Bureau Deputy Director can revoke DOA/cancel/suspend project or provide enhanced oversight.

The UNDP Resident Representative assumes full responsibility and accountability for oversight and quality assurance of this Project and ensures its timely implementation in compliance with the GEF-specific requirements and UNDP's Programme and Operations Policies and Procedures (POPP), its Financial Regulations and Rules and Internal Control Framework. A representative of the UNDP Country Office will assume the assurance role and will present assurance findings to the National Steering Committee, and therefore attends National Steering Committee meetings as a non-voting member.

UNDP project support: The Implementing Partner and GEF OFP have requested UNDP to provide support services in the amount of USD\$ 50,000 (Direct Project Cost) for the full duration of the project. The execution support services – whether financed from the project budget or other sources - have been set out in detail and agreed between UNDP Country Office and the Implementing Partner in a Letter of Agreement (LOA). This LOA is attached to this Project Document under Annex 13.

UNDP will process direct payments on the request from IP as per the approved workplan. For direct payments, the government assumes responsibility for the contracting process, performs recruitment or procurement, and signs the contract according to its own rules and regulations (whose principles should conform to those of UNDP). UNDP only provides banking services. To ensure no conflict of interest, there will be clear roles and responsibilities between Implementing Partner and UNDP with two key principles to be followed:

1. None of UNDP contract holders can be involved in the approval or selection process of vendors or contractors to whom the direct payment is going to be made.
2. None of UNDP contract holders will sign off on any business processes or transactions that are under the IP's accountability that UNDP is subsequently asked to pay for through direct payment.

To ensure the strict independence required by the GEF and in accordance with the UNDP Internal Control Framework, these execution services will be delivered independent from the GEF-specific oversight and quality assurance services.

Segregation of duties and firewalls vis-à-vis UNDP representation on the National Steering Committee

As noted in the [Minimum Fiduciary Standards for GEF Partner Agencies](#), in cases where a GEF Partner Agency (i.e. UNDP) carries out both implementation oversight and execution of a project, the GEF Partner Agency (i.e. UNDP) must separate its project implementation oversight and execution duties, and describe in the relevant project document a: 1) Satisfactory institutional arrangement for the separation of implementation oversight and executing functions in different departments of the GEF Partner Agency; and 2) Clear lines of responsibility, reporting and accountability within the GEF Partner Agency between the project implementation oversight and execution functions.

In this case, UNDP's implementation oversight role in the project – as represented in the National Steering Committee and via the project assurance function – is performed by UNDP Deputy Resident Representative and Head, Action for Climate and Environment, Head, Climate Change Adaptation and Natural Resource Management and Programme Associate. UNDP's execution role in the project (as requested by the implementing partner) is performed by the relevant staff of the Finance, Procurement, and HR Units of the CO and technical experts/assistants who will report to the CO's Operations Manager.

Roles and Responsibilities of Project Organisation Structure

Project Board:

All UNDP projects must be governed by a multi-stakeholder board or committee established to review performance based on monitoring and evaluation, and implementation issues to ensure quality delivery of results. The Project Board (also called the National Steering Committee) is the most senior, dedicated oversight body for a project.

The two main (mandatory) roles of the project board are as follows:

- 1) **High-level oversight of the execution of the project by the Implementing Partner** (as explained in the [“Provide Oversight”](#) section of the POPP). This is the primary function of the National Steering Committee and includes annual (and as-needed) assessments of any major risks to the project, and decisions/agreements on any management actions or remedial measures to address them effectively. The National Steering Committee reviews evidence of project performance based on monitoring, evaluation and reporting, including progress reports, evaluations, risk logs and the combined delivery report. The National Steering Committee is responsible for taking corrective action as needed to ensure the project achieves the desired results.
- 2) **Approval of strategic project execution decisions of the Implementing Partner** with a view to assess and manage risks, monitor and ensure the overall achievement of projected results and impacts and ensure long term sustainability of project execution decisions of the Implementing Partner (as explained in the [“Manage Change”](#) section of the POPP).

Requirements to serve on the National Steering Committee:

- ☐ Agree to the Terms of Reference of the Board and the rules on protocols, quorum and minuting.
- ☐ Meet annually; at least once.
- ☐ Disclose any conflict of interest in performing the functions of a National Steering Committee member and take all measures to avoid any real or perceived conflicts of interest. This disclosure must be documented and kept on record by UNDP
- ☐ Discharge the functions of the Project Board in accordance with UNDP policies and procedures.
- ☐ Ensure highest levels of transparency and ensure Project Board meeting minutes are recorded and shared with project stakeholders.

Responsibilities of the National Steering Committee:

- ☐ Consensus decision making:
 - o The National Steering Committee provides overall guidance and direction to the project, ensuring it remains within any specified constraints, and providing overall oversight of the project implementation.
 - o Review project performance based on monitoring, evaluation and reporting, including progress reports, risk logs and the combined delivery report;
 - o The National Steering Committee is responsible for making management decisions by consensus.
 - o In order to ensure UNDP’s ultimate accountability, National Steering Committee decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.
 - o In case consensus cannot be reached within the Board, the UNDP representative on the board will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.
- ☐ Oversee project execution:

- o Agree on National Project Director's tolerances as required, within the parameters outlined in the project document, and provide direction and advice for exceptional situations when the National Project Director's tolerances are exceeded.
- o Appraise annual work plans prepared by the Implementing Partner for the Project; review combined delivery reports prior to certification by the implementing partner.
- o Address any high-level project issues as raised by the National Project Director and project assurance;
- o Advise on major and minor amendments to the project within the parameters set by UNDP and the donor and refer such proposed major and minor amendments to the UNDP BPPS Nature, Climate and Energy Executive Coordinator (and the GEF, as required by GEF policies);
- o Provide high-level direction and recommendations to the NATCOM Cell to ensure that the agreed deliverables are produced satisfactorily and according to plans.
- o Track and monitor co-financed activities and realisation of co-financing amounts of this project.
- o Approve the Inception Report, GEF annual project implementation reports, mid-term review and terminal evaluation reports.
- o Ensure commitment of human resources to support project implementation, arbitrating any issues within the project.
- Risk Management:
 - o Provide guidance on evolving or materialized project risks and agree on possible mitigation and management actions to address specific risks.
 - o Review and update the project risk register and associated management plans based on the information prepared by the Implementing Partner. This includes risks related that can be directly managed by this project, as well as contextual risks that may affect project delivery or continued UNDP compliance and reputation but are outside of the control of the project. For example, social and environmental risks associated with co-financed activities or activities taking place in the project's area of influence that have implications for the project.
 - o Address project-level grievances.
- Coordination:
 - o Ensure coordination between various donor and government-funded projects and programmes.
 - o Ensure coordination with various government agencies and their participation in project activities.

Composition of the National Steering Committee: The composition of the National Steering Committee must include individuals assigned to the following three roles:

1. **Project Executive:** is an individual who represents ownership of the project and chairs (or co-chairs) the Project Board. The Executive usually is the senior national counterpart for nationally implemented projects (typically from the same entity as the Implementing Partner), and it must be UNDP for projects that are direct implementation (DIM). In exceptional cases, two individuals from different entities can co-share this role and/or co-chair the Project Board. If the project executive co-chairs the project board with representatives of another category, it typically does so with a development partner representative. The Project Executive is: Senior Representative of the Ministry of Environment, Forest and Climate Change (MoEFCC) of the Government of India.
2. **Beneficiary Representative(s):** Individuals or groups representing the interests of those groups of stakeholders who will ultimately benefit from the project. Their primary function within the board is to ensure the realization of project results from the perspective of project beneficiaries. Often civil society representative(s), industry associations, or other government entities benefiting from the project can fulfil this role. There can be multiple beneficiary representatives in a National Steering Committee. The beneficiary representatives are the Climate Change Division, Ministry of Environment, Forestry and Climate Change (MoEFCC) of the Government of India, civil society organizations, industry organizations and other ministries.

3. **Development Partner(s):** Individuals or groups representing the interests of the parties concerned that provide funding and/or technical expertise to the project. The Development Partner is the United Nations Development Programme (UNDP) Deputy Resident Representative.

Project Assurance: Project assurance is the responsibility of each National Steering Committee member; however, UNDP has a distinct assurance role for all UNDP projects in carrying out objective and independent project oversight and monitoring functions. UNDP performs quality assurance and supports the National Steering Committee (and NATCOM Cell) by carrying out objective and independent project oversight and monitoring functions, including compliance with the risk management and social and environmental standards of UNDP. The National Steering Committee cannot delegate any of its quality assurance responsibilities to the National Project Director. Project assurance is totally independent of project execution.

A designated representative of UNDP playing the project assurance role is expected to attend all board meetings and support board processes as a non-voting representative. It should be noted that while in certain cases UNDP's project assurance role across the project may encompass activities happening at several levels (e.g. global, regional), at least one UNDP representative playing that function must, as part of their duties, specifically attend board meeting and provide board members with the required documentation required to perform their duties. The UNDP representative playing the main project assurance function is Head, Action for Climate and Environment, UNDP.

Project Management – Execution of the Project: The Ministry of Environment, Forest and Climate Change has a pre-established National Communication (NATCOM) Project management unit / NATCOM Cell that will assist the National Project Director in meeting India's reporting requirements to the UNFCCC.

The National Project Director (NPD) employed by the Government of India is the senior most representative of the NATCOM Cell and is responsible for the overall day-to-day management of the project on behalf of the Implementing Partner, including the mobilization of all project inputs, supervision over project staff, responsible parties, consultants and sub-contractors. The NPD is responsible for key deliverables and documents to the board for their review and approval, including progress reports, annual work plans, adjustments to tolerance levels and risk registers.

A designated representative of the NATCOM CELL is expected to attend all board meetings and support board processes as a non-voting representative.

The primary NATCOM CELL representative attending board meetings is: National Project Director.

National Project Director (NPD)

- The NPD will reside within the NATCOM Cell at MoEFCC. The cell will have the authority to run the project on a day-to-day basis on behalf of the Implementing Partner within the constraints established by the National Steering Committee.
- NATCOM Cell's primary responsibility is to ensure the project produces the results specified in the project document within quality standards and specified time and cost constraints. The cell will inform the National Steering Committee and the Project Assurance roles of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted. The NATCOM CELL will remain on contract until the Terminal Evaluation report and the corresponding management response have been finalized and the required tasks for operational closure and transfer of assets are fully completed.

Specific responsibilities include:

- Manage the overall conduct of the project.
- Plan the activities of the project and monitor progress against the approved workplan.
- Execute activities by managing personnel, goods and services, and trainings including drafting terms of reference and work specifications, and overseeing all contractors' work.
- Monitor events as determined in the project monitoring plan, and update the plan as required.
- Provide support for completion of assessments required by UNDP, spot checks and audits.
- Manage requests for the provision of UNDP financial resources through funding advances, direct payments or reimbursement using the FACE form.
- Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports.
- Monitor progress and watch for plan deviations and make course corrections when needed within National Steering Committee -agreed tolerances to achieve results.
- Ensure that changes are controlled and problems addressed.
- Perform regular progress reporting to the National Steering Committee, as agreed, including measures to address challenges and opportunities.
- Prepare and submit financial reports to UNDP on a quarterly basis.
- Manage and monitor the project risks – including social and environmental risks - initially identified and submit new risks to the National Steering Committee for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risk log;
- Capture lessons learned during project implementation.
- Prepare revisions to the multi-year workplan, as needed, as well as annual and quarterly plans if required.
- Prepare the inception report no later than one month after the inception workshop.

Narrative description of project activities:

PROJECT COMPONENT 1: NATIONAL CIRCUMSTANCES AND INSTITUTIONAL ARRANGEMENTS UPDATED IN BUR4 AND 4NC.

Outcome 1.1: National circumstances and institutional arrangements relevant to the preparation of the national communications updated and described on a continuous basis.

Under this component, a report on the national circumstances will be prepared. The report will include both national and regional development priorities, including the development of indicators to assess the sustainability of the National Communication process in the country. In addition, the report will contain special circumstances, including the special needs and concerns arising from the adverse effects of climate change and/or of the implementation of response measures. This component will result in the following specific outputs:

Output 1.1.1: The country's geographical features, measures towards sustainable development and poverty eradication and overall national circumstances, human population growth rates (along with gender, literacy rates and age class), natural resources, climate and economy which may affect the country's ability to deal with climate change mitigation and adaptation, described in the NC and BUR, where possible with gender disaggregated data on women's and men's role, issues, and decision-making in resources use.

India is characterised by its vast geographical area, the size and diversity of the population, the variability of weather patterns and different climates, and a high dependence of its population on climate sensitive sectors. Information provided on national circumstances is therefore critical for understanding India's vulnerability, its capacity and options for adapting to the adverse effects of climate change, as well as options for addressing its GHG emissions within the broader context of sustainable development. This output will result in updated information on India's geography, population, climate, economy, communities, resources and the predominant climate sensitive sectors. It will also address varying needs of vulnerability assessment, adaptation, mitigation for different geographic regions such as mountains, Northern Plains, Thar Desert, Peninsular Plateau, Coastal Plains and Islands.

The Sixteenth Census of India (Census 2021), was to be undertaken in 2021 with results expected in 2022. However, due to COVID pandemic the census has had to be postponed. The Fifteenth Census (2011) attempted to estimate the population based on Socio-Economic Status. For the Sixteenth Census of India, the government is considering to also enumerate demographic data based on educational and social disadvantages. The next Census may provide updated gender disaggregated data and human population growth rates (along with gender, literacy rates and age class).

Output 1.1.2: The ability to deal with mitigating and adapting to climate change, as well as information regarding specific needs and concerns arising from the adverse effects of climate change and/or the impact of the implementation of response measures analysed and reported.

India's varied topography, physio-geography, climate, biosphere, agriculture, urbanisation spanning a geographic area of 3.28 million km² has varied levels of vulnerability to climate change calling for different approaches to mitigation and adaptation plans. Accordingly, it is important to highlight the adverse effects of climate change and/or the impact of the implementation of response measures on the biogeographical character, human population, natural resources, climate and economy.

Output 1.1.3: National development objectives, priorities and circumstances impacted by climate change and associated risks described and mainstreaming progress into policy frameworks assessed and reported.

This output will result in a report which will focus on updating information on India's climate change related policy framework and will allow the country to be able to highlight its development priorities, policies and programmes at national and state level with focus on climate change including gender. Hence, it will contribute in preparing environment/climate sensitive National Economic Development Plan keeping due focus on country's objectives and priorities in relation to different sectors of economy in response to well-identified national needs. It will also help propose an overall plan in which emphasize the role of individual sectors in the context of clean development.

Outcome 1.2: Institutional Arrangement is described.

The reporting requirements for non-Annex I countries have changed over the years, including the related guidelines. It is therefore important to have the required capacity and strong institutional arrangement to facilitate the preparation of the 4NC and the BUR4. This component will enhance the institutional capacity in India for climate change related stakeholders for the required preparation of national reports, and will result in the following specific outputs:

Output 1.2.1: Gender balanced institutional system established and capacity strengthened for conducting research/ systematic observation and collecting, collating and analysing data for preparation of BUR4 and 4NC.

The project will be a beneficial entry point for ensuring equal engagement in and benefit from climate change actions for both men and women. One of the focus areas of this project will therefore be on establishing a gender balanced institutional structure relevant to the periodic conduct of the GHG inventory. It may assist in defining the Women's Empowerment needs in changing climate impacted economic activities along with identification of gaps and ways to benchmark where an organisation stands in terms of gender equality and take corrective steps.

Output 1.2.2: Description of institutional arrangements relevant to the preparation of the NC, and BUR are reported on a continuous basis.

Technical and institutional arrangements for preparing the NCs on a sustained basis has been established and presented in NC-1, NC-2, BURs – 1,2 and 3. Institutional and technical arrangements for sustained reporting may be achieved through, but not limited to, the National Institute for Climate Change Studies and Actions (NICCSA) which is being established under Climate Change Action Programme (CCAP) of MoEFCC. The objective of NICCSA or any other such institution(s), would be to support all scientific, technical and analytical studies relating to climate change policy and implementing strategies. Further, GoI has also established several institutions which provide data and inputs for various facets of CC such as GHG inventory preparation, mitigation and adaptation actions, and CC projections at different levels. Some of these include:

- 1) National Innovations in Climate Resilient Agriculture (NICRA) under Ministry of Agriculture & Farmers Welfare (MoAFW)
- 2) Centre for Climate Change Research (CCCR) established at the Indian Institute of Tropical Meteorology (IITM) Pune under Ministry of Earth Sciences (MoES)
- 3) Regional Climate Centre (RCC) at Indian Meteorological Department (IMD), Pune in conjunction with World Meteorological Organization
- 4) National Institute of Ocean Technology (NIOT), Indian National Center for Ocean Information Services (INCOIS), and Centre for Marine Living Resources & Ecology (CMLRE) under MoES.
- 5) Petroleum Planning & Analysis Cell, Ministry of Petroleum and Natural Gas.
- 6) Forest Survey of India (FSI) and Indian Space Research Organisation (ISRO).
- 7) Inter-University Consortium on Cryosphere and Climate Change (IUCCCC) under the Department of Science and Technology (DST).

Institutional Arrangement for NCs and BURs are being continuously strengthened through participation of new institutions such as EESL, IORA, CEEW, BOBP IGO, BNHS, SDMRI, FRLHT-TDU and INTACH under TNC. The institutional arrangements have been appropriately covered as independent sections in BUR-1, BUR-2 and BUR-3. Therefore, requirement for sustained institutional arrangements will have to be articulated in various activities and sectors. Establishment of institutional arrangements relevant to the preparation of the BUR-4 and 4NC on a continuous basis will be estimated and presented under this 4NC/BUR4 project (NATCOM-4).

PROJECT COMPONENT 2: DEVELOPING GHG INVENTORY AS PER 2006 IPCC GUIDELINES.

Outcome 2.1: Improvement of GHG inventory through the use of tier-II and III methodologies for key category sectors.

As per the third BUR, India's 2016 emissions were 2,838,889 Gigagrams of CO₂-equivalent (CO₂e) of greenhouse gases (GHGs) without Land Use, Land-Use Change and Forestry (LULUCF). The LULUCF sector remained a net sink. With the inclusion of GHG emissions and removals from the LULUCF sector, net

national emissions were 2,531,069 Gg of CO₂e. It is stated that “the energy sector contributed in emissions with 75 per cent, followed by agriculture 14 per cent, IPPU 8 per cent and waste 3 per cent. Total national emissions (including LULUCF) have increased by 9.02 per cent from 2014.”

The second BUR submitted by India captured India’s emission of 2.607 billion tonnes of CO₂ equivalent of GHG in 2014. The highest share originated from the energy sector (73% of total emission), followed by the agriculture (16%), industries (8%) and waste (3%) sectors. In addition, 12% of the country’s emissions were offset by the carbon sink action of forests, crop land and settlements. The inventory covered six GHGs, namely carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆). These were calculated under the categories Energy, Industrial Processes and Product Use (IPPU), Agriculture, Land Use, Land-Use Change and Forestry (LULUCF) and Waste. India has used the Revised 1996 IPCC Guidelines and also the 2006 IPCC Guidelines for GHG inventories to the extent possible. The second BUR highlighted that India’s compounded annual growth rate of emissions between 2010 and 2014 was merely 5%, an indication that the country has well been on track to meet its goal under the Paris Agreement on climate change.

The Team of Technical Experts (TTE) during the ICA process of the Third BUR (BUR-3) identified the capacity-building needs related to the facilitation of the preparation of subsequent national communications on estimating and reporting of GHG inventories, which are related to:

- a) Enhancing capacity to estimate and report CO, NO_x and NMVOC emissions;
- b) Enhancing the technical capacity to calculate consistent time series, especially for the LULUCF sector;
- c) Estimating and reporting HFC, PFC and SF₆ emissions from, for example, air conditioning and refrigeration and the electronics industry and electrical equipment;
- d) Enhancing capacity to develop mitigation actions in the waste sector and assessing and quantifying their impacts;
- e) Establishing a long-term institutional and operational system for periodic, continuous and enhanced GHG emission estimation for national reporting under UNFCCC reporting requirements.

During the BUR-3 TA, India also outlined ongoing capacity-building needs and identified the following as additional needs:

- a) GHG inventories: enhancing use of the 2006 IPCC Guidelines to facilitate use of new methodologies and collection of more detailed data for the energy, industrial processes and product use, agriculture, LULUCF and waste sectors;
- b) Mitigation actions: enhancing capacity for data collection to estimate the coverage and results achieved related to the co-benefits of mitigation actions in the agriculture sector;
- c) Adaptation actions: enhancing the capacity to minimize loss and damage due to weather-related disasters through weather and climate forecasting and services and energy management systems.

The improvement of the emission inventory system is a dynamic process, and sustained efforts are being made to ensure that India’s GHG emission inventory is of high quality, transparent and consistent with the requirements of the IPCC inventory guidelines. GHG reporting in NC and BURs is under the aegis of the UNFCCC, and India is to abide by the decisions of the CoP to the UNFCCC, as may be appropriate, with respect to GHG reporting and use of IPCC guidelines.

The third BUR report was submitted in February 2021. The Third NC (TNC) has also been prepared and is under final stages of review by the Government of India prior to submission to the UNFCCC. The TNC provides an update of the GHG inventory up to the year 2019 and covering the Energy, Industrial Processes

and Product Use (IPPU), Agriculture, Land Use, Land-Use Change and Forestry (LULUCF) and Waste sectors, using a combination of methods from the Revised 1996 and 2006 IPCC Guidelines.

The objective of the project component is to refine and update the inventory of anthropogenic emissions and removals of GHG and to extend its coverage up to 2024/25 on an annual basis and the adoption of higher tier estimations, as may be applicable, as per the decisions of CoP to the UNFCCC. It will focus on the sectors and gases that have either a significant share of the emissions or present a large degree of uncertainty, or both, and taking in consideration the efforts required to improve the estimates. The development of a national inventory is a resource-intensive undertaking and priorities were established for refining estimates of emissions only for the main sectors and gases because the estimation methodology and data quality can improve with time. By project end, an updated emission inventory will be available, providing a continuous basis GHG emission data by sectors as well as trends. Moreover, the 4NC/BUR4 will further develop the quality control and quality assurance procedures for the information and data used. The outcome will result in the following specific outputs:

Output 2.1.1: Documented inventory of GHG emissions as per 2006 IPCC guidelines for (a) Energy (b) Transport (c) Industry (d) Agriculture (e) Land Use, Land Use Change and Forestry, and (f) Waste sectors, for 2021 (BUR4) and 2024/25 (4NC).

This output will result in the updated GHG inventory up to 2021 for the BUR4 and up to the year 2024/25 for 4NC. Both GHG inventories will cover the Energy, Industrial Processes and Product Use (IPPU), Agriculture, Land Use, Land-Use Change and Forestry (LULUCF) and Waste sectors.

Output 2.1.2: Completed National Activity Data, and development and refinement of country specific Emission Factors and information for key category sectors.

In preparation of the previous two NCs and the three BURs, India has used both global default and country-specific emission factors. For estimating tier-I emissions, global default emission factors were used and for tier II, country-specific emission factors were used. Under the SNC, fuel wise emission factors were derived. Under the TNC, emission factors of fuels were derived sector wise. Deriving emission factors is a continuous process, refinement of emission factors for grades of fuel will be attempted under the proposed project. This will lead to uncertainty reduction in overall inventory preparation.

Based on the experience and capacity built during the previous NC/BUR preparations, Tier II and III methods and models will be adopted for the formulation of BUR4 and 4NC. During the preparation of the third BUR, India was able to cover Tier II emissions for some sectors and sub sectors outlined in the table below.

Table 1. Summary of emission factors and methodologies in the Third Biennial Update Report.

Type of Emission Factor and Level of Methodological Tier Employed for Greenhouse Gas (GHG) Estimation for preparation of BUR-3.

Gas	CO ₂		CH ₄		N ₂ O	
Sector/ Category	Method used	Emission Factor	Method used	Emission Factor	Method used	Emission Factor
1. ENERGY						
A. Fuel Combustion Activities						
1. Energy Industries	T1, T2, T3	D, CS	T1	D	T1	D
2. Manufacturing Industries & Construction	T1, T2, T3	D, CS	T1, T2	D	T1	D
3. Transport	T1, T2	D, CS	T1, T2	D	T1, T2	D
4. Other sectors	T1, T2	D, CS	T1	D	T1	D
B. Fugitive Emission from fuels						
1. Solid fuels	NO		T2, T3	CS	NO	
2. Oil and Natural gas	NO		T1	D	NO	
2. INDUSTRIAL PROCESS						
A. Mineral Industry	T1, T2	D, CS	NO		NO	
B. Chemical Industry	T1, T2	D, CS	T1	D	T1, T2	D, CS
C. Metal Industry	T1, T2	D, CS	T1	D	NO	
D. Non-energy product use	NO		NO		NO	
E. Production of halocarbons	NO		NO		NO	
3. AGRICULTURE						
A. Enteric Fermentation	NO		T1, T2	D, CS	NO	
B. Manure Management	NO		T1	D	T1	D
C. Rice Cultivation	NO		T2	CS		
D. Agricultural soils	NO		NO		T2	CS

D. Agricultural Soils	NO		NO		T2	CS
F. Field Burning of Agricultural Residues	NO		T1	D	T1	D
4. Land Use, Land-Use Change and Forestry LULUCF						
A. Forestland	T2	CS	T2	D, CS	T2	D, CS
B. Cropland	T2	CS	NO		NO	
C. Grassland	T2	CS	NO		NO	
D. Settlements	T2	CS	NO		NO	
5. WASTE						
A. Solid waste disposal on land	NO		T2	D, CS	NO	
B. Waste-water handling	NO		T1, T2	D, CS	T1, T2	D, CS
Memo Item (not accounted in total Emissions)						
International Bunkers	T1, T2	D	T1, T2	D	T1, T2	D
CO ₂ from Biomass	T1	D	NO		NO	
T1- Tier 1; T2- Tier 2; T3- Tier 3; CS- Country Specific; D- IPCC Default, NO-Not Occurring, NANot Applicable, NE-Not Estimated						

This output will result in adopting higher tier methodologies (essentially tier II and III) using key category analysis and uncertainty assessment which requires new and incremental technical, financial, and capacity support. This would involve development, validation, and application of models for different sectors and regions. Graduation to tier II and tier III methodologies would potentially lead to reduction of uncertainties and complete estimation of inventory for all the relevant IPCC inventory categories for India. Therefore, activities shall focus on identifying appropriate climate models, data needs and sources for undertaking impact studies.

Output 2.1.3: Documented national and other methodologies adopted for the GHG inventory and analysis of application of the 2006 IPCC Guidelines in the GHG Inventory.

The latest IPCC Guidelines and good practice guidance recommended by UNFCCC will be adopted. Moreover, the scientific and methodological improvements suggested in the 2006 IPCC GHG Inventory Guidelines will be followed. This output will result in documentation of these national and other methodologies

adopted for the GHG inventory of India.

Output 2.1.4: Developed institutional capacity for using 2006 IPCC guidelines and adoption of higher tier estimation as identified during ICA of previous BURs.

This output will result in the developed institutional capacity across institutions involved in the inventory preparation for full transition and adoption of the 2006 IPCC guidelines, including capacity for subsequent revision. This output will benefit from the capacity enhanced by the CBIT project and will develop GHG emission inventory for BUR 4 and 4NC as per the IPCC 2006 guidelines or subsequent revisions.

Output 2.1.5: Quantitative estimates for all source and sink categories including uncertainty assessment as per the IPCC Good Practice Guidance and other appropriate methodologies adopted along with international comparisons.

This output will result in quantitative estimates for all source and sink categories including uncertainty assessment. The refinement of emission factors for grades of fuel under the proposed project will lead to uncertainty reduction in overall inventory preparation. In addition, a national emission factor database would be developed/revised/updated for key sources and country specific emission factors as per different IPCC inventory key sector categories that belong to different sectors, regions based on field studies; laboratory measurements; and, surveys of industries, municipalities, households, farms etc. The database would be validated along with uncertainty associated with the emission factors. Further, an assessment may be carried out for comparisons of quantitative estimation by other countries.

Output 2.1.6: Improved time series consistency and recalculations based on the revised country specific emission factors and better-quality activity level data, wherever revised.

This output will result in the improved time series consistency of the GHG inventory of India, validating the developed INC, SNC, TNC, where necessary. It will additionally result in recalculations of certain sectors based on the revised country specific emission factors and better-quality activity level data.

Output 2.1.7: Uncertainty management and Quality Control and Quality Assurance Procedures in accordance with IPCC guidelines for key categories and individual categories in which significant methodological changes have occurred, established and applied on the information and data used.

Uncertainty management and Quality Control and Quality Assurance (QC/QA) Procedures in accordance with IPCC guidelines for key categories and individual categories would be undertaken under the project building on the QC/QA outcomes of previous NCs and BURs.

Output 2.1.8: Strengthened activity data flow systems to report on "F" and precursor gases additional to CO₂, CH₄ and N₂O.

The Team of Technical Experts (TTE) during the ICA process of India's BUR2 identified the capacity-building needs related to the facilitation of the preparation of subsequent national communications on estimating and reporting of GHG inventories related to improved estimations and reporting of HFC, PFC and SF₆ emissions from, for example, air conditioning and refrigeration and the electronics industry and electrical equipment and improved estimations and reporting of CO, NO_x, NMVOC and SO_x emissions. This output will therefore result in strengthened activity data flow systems to report these F-gases and precursor gases in addition to CO₂, CH₄ and N₂O.

Output 2.1.9: Continued strengthening of sectoral and network of supporting research institutions to allow continued collection of GHG data.

In 2011, India has launched 'National Innovations in Climate Resilient Agriculture (NICRA)' a network of the Indian Council of Agricultural Research (ICAR). NICRA aims to enhance resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration for adaptation and mitigation covering crops, livestock, fisheries and natural resource management. The National Institute on Climate Change Studies and Actions (NICCSA) is envisaged to be the nodal agency for climate change in India. The Union Cabinet has already approved the establishment of the institution. The National Inventory Management System (NIMS) is one of the components under NICCSA. Under the Third National Communication project a platform to collect data from industries, especially medium-small and micro enterprises, has been developed for the IPPU sector. A pilot platform has already been launched and is active. This project will build on the existing platform for widening the coverage and bringing some more sectors under the ambit of NIMS. This output will therefore result in the strengthening of NIMS through sectoral institutions and network of supporting research institutions. NICRA and NICCSA can help not only strengthen research institutions in continuous collection of GHG data but also for Impact, Vulnerability and Adaptation assessments.

PROJECT COMPONENT 3: IMPACT, VULNERABILITY AND ADAPTATION

This component would involve improved climate change projections, impact assessment, and the development of vulnerability profiles based on newer and better vulnerability indicators and methodologies, for key existing and/or unexplored sectors. The vulnerability assessments would be used to highlight adaptation options and development of strategy for mainstreaming adaptation in the context of overcoming both development deficits and adapting to the impact of climate change.

The impact assessment would cover key socio-economic and priority sectors for which multiple models can be used.

Outcome 3.1: Improved climate change projections, appropriate actions planned for addressing impacts of, and vulnerability and adaptation to, climate change by different sectors and regions with the use of advanced and updated climate change models.

The expected outcome will use a network of institutions such as the Indian Institutes of Technology, Indian Institute of Science, M. S. Swaminathan Research Foundation, and Centre for Climate Change Research (CCCR) at the Indian Institute of Tropical Meteorology (IITM) Pune to better understand the socio-economic-environmental impacts of and vulnerability to climate change for various sectors. The Outcome is expected to deliver adaptation strategies for a few key sectors based on better understanding of the science of climate change over the tropics and improved assessments of the regional climate responses to global climate change. These adaptation strategies would pay particular attention to the recognition of adaptation as a moving, dynamic target for developing countries and the need to assure adaptation strategies that are focused on concurrently delivering growth, productivity and production increase and increase in basic consumption needs of the majority of the population.

As part of the Third National Communication project, climate prediction-based impact assessment models were used for some sectors. The economic cost of impact and adaptation has also been assessed. The impacts and the corresponding adaptation strategies will be used to prepare the adaptation framework relevant to sectors. However, for improved planning of adaptation strategies, India will need to undertake further assessments at the sub-sectoral level.

The proposed project intends to delve deeper into these sectors that were part of the TNC process, and in addition, new sectors will be identified for assessment. For example, ecosystems or species representing different biological taxa or a group of species potentially vulnerable to climate change in the biodiversity sector will be specifically assessed. New methodologies will be developed to better capture quantified assessments of vulnerability in indicators that are decomposable across sub-sectors, sub-regions and population sub-groups.

In the agriculture sector, adaptation to climate change would require innovative-technological solutions to the realisation, inter alia, of key national goals, especially the doubling of productivity and the doubling of incomes, particularly for small holders in agriculture, the most vulnerable section of the rural population. In this connection, it is also necessary to relate the impact of climate change to problems of water security, wastes and land degradation. and the corresponding adaptation strategies. India has declared a dedicated goal on adaptation in vulnerable sectors like agriculture, water resources, Himalayan region, coastal regions, health, and disaster management in its NDC.

New and innovative approaches to vulnerability and risk climate risk assessment will be developed, going beyond the first generation of simple, spatial averages over a large number of indicators, that dilute the specific and differentiated socio-economic character of vulnerability in particular occupational and other groups and the specific and differentiated vulnerability of ecosystems across agro-climatic or agro-ecological zones. For some specific ecosystems, such as wetlands and coastal zones, ecosystem-based adaptation strategies can provide integrated solutions to adaptation requirements. Monitoring and documenting the results of the adaptation measures will help in reporting India's contributions and needs to the UNFCCC. This Outcome will result in the following specific outputs:

Output 3.1.1: Documented projections and results of impact assessments of climate change based on multiple Climate Change Models (CCMs) for different sectors in India.

This output will result in an improved assessment of climate change impacts and vulnerability of different sectors such as the Himalayas and glaciers, water resources, various forests types, grasslands including biodiversity, agriculture (including horticulture, agro-forestry, fisheries, livestock etc) and agro-ecological zones, food-fiber and livelihood, infrastructure and other cross cutting issues, at decentralized level, as well as development of adaptation strategies and practices. All studies and research under this component will be inclusive of gender impacts, roles, responsibilities and contribution in decision making. The output will cover both current impact of climate variability as well as projections for the future with suitable comparison. The documented projections and results will be based on multiple Climate Change Models (Global and Regional climate models (GCMs and RCMs)).

Output 3.1.2: Integrated system for multi-model ensemble for climate change and extreme climate events projections at the national level developed.

The output will result in the development of multiple impact assessment models to be adopted by India. These multiple climate model projections will use CORDEX along with Indian data and multiple sector specific impact assessment models will be adopted for a realistic assessment of climate change impacts. The project will support the customization of international models with inclusion of parameters specific to India and the development of indigenous models. The project will also support uncertainty reduction through improved models and collection of more accurate data/information required as inputs to these models. These are based on: (a) Dynamic vegetation/crop models; (b) Analysis of impacts on cropping system, river basin, forest type scales assessed at district level; and (c) Impact assessments for short 2030, medium 2050 and long 2075 terms for all relevant sectors.

Output 3.1.3: Vulnerability profiles based on i) currently established vulnerability indicators at the district spatial scale, ii) vulnerability indices that are decomposable across agro-climatic zones, populations groups by income strata, gender, rural or urban location, and administrative location up to district or sub-district level, both to be undertaken for overall vulnerability, and for different sectors.

The first part of the output will result in updating the known spatial vulnerability profiles in GIS format at district level based on existing vulnerability indices for overall vulnerability of different sectors, and sub sectors. The second part of the output will be an innovative development that will have a major impact on the direct intervention of the governance and administrative structures by providing an index structure and ranking that is sensitive to multiple deprivations due to economic, social and climatic factors and their spatial variation as well as their intersectionality. The innovative vulnerability profiling based on vulnerability indicators and vulnerability indices that are decomposable at district or sub-district level across agro-climatic zones, populations groups by income strata, gender, rural or urban location, and administrative location up to district or sub-district level, both to be undertaken for overall vulnerability, and for different sectors. The vulnerability profiling will also similarly be undertaken across different natural ecosystems (including grasslands, forest types, coastal and marine areas (mangroves), wetlands). In key priority socio-economic sectors, including urban infrastructure, agriculture, and health, the current status of development deficits and future vulnerabilities shall be developed in synergy with various initiatives including alignment with the road map for the NDC, NAPCC and SAPCC.

Output 3.1.4: Documented ranking of (climatic parameter wise) most vulnerable natural ecosystems and organisms, crops, and water resources at district level for India.

The output will result in a documented ranking of the most vulnerable natural ecosystems, crops, and water resources at district level for India based on updating existing indices as well as exploring new indices that may provide better insights. Initiatives of NICRA on strategic research, technology demonstration and capacity building covering adaptation and mitigation aspects related to crops, livestock, fisheries and natural resource management is a step forward in this direction.

Output 3.1.5: Critical infrastructure resilience index for major infrastructure at state and/or district levels, including application of techniques developed for the Coalition on Disaster Resilient Infrastructure.

Along with prevention and mitigation of the impacts of events such as cyclones and cloud bursts/flash floods (Mumbai 2005, Chennai 2017 and Bengaluru 2020) there is a need for preparedness, response, and recovery programs and capabilities of critical infrastructure such as electricity, food supply, healthcare, drinking water, and transportation to improve the nation's overall resilience. There are some critical infrastructure sectors that are essential to the nation's security, public health and safety, economic vitality, and general quality of life. The operations of these critical infrastructure sectors are essential, and their protection and resilience are paramount. To ensure a more resilient nation it is imperative that individuals, communities, and the economy can adapt to changing conditions as well as withstand and rapidly recover from disruption due to emergencies. This innovative output will be focused on infrastructure and infrastructure resilience to advise the development of climate-resilient infrastructure in the country. Typical cases to study for the cycle of 4th NATCOM will include railways, based on work already begun in 3rd NATCOM, power and road infrastructure. This output will also relate to the resilience, to climate shocks, of infrastructure related to public health, access to markets, food supply and storage, based on the underlying structure of power and transport connectivity, to be typically measured by the time required to restore connectivity (in the overall network sense) to the original state. Typical climate shocks to be considered in the first instance will be extreme precipitation and floods, and cyclonic storms.

Output 3.1.6: Adaptation framework describing over-arching requirements and institutional mechanisms, including formulation of adaptation plans for five-year time periods, or as may be appropriate.

This output will result in a proposal of an adaptation framework which will describe over-arching requirements and institutional mechanisms for knowledge generation, formulation of measures and plan of implementation for adaptation. The framework will in particular provide the guidance for the formulation of adaptation plans, for five-year time periods, and the nature of measures currently implemented and proposed measures to be implemented in India. The framework should assess the Economics and costs of adaptation at the economy wide scale as well detailed analysis for key relevant and priority socio-economic sectors. The Framework shall also take into account international comparisons with respect to other Parties, in reference to varying aspects of adaptation, including, inter alia, scale, population affected, development challenges, and intensity of exposure, together with anticipated costs of adaptation. The First Adaptation Plan will be prepared in accordance with this framework.

This Adaptation Plan will also comprise actions and knowledge developed for various sectors highlighted in Output 3.1.3 in synergy with other development initiatives including alignment with the road map for the NDC, NAPCC and SAPCC. Attempts to be made to mainstream climate change adaptation into key development strategies, government budgets and schemes; sector-based policy frameworks.

In order to facilitate scientifically informed adaptation strategies to combat climate change, there is a need to undertake sector specific projects to facilitate adequate adaptation and planning effective measures. The outcome of such pilot studies can assist the country to mitigate the adverse effects of climate change. It will also support the implementation of concrete adaptation projects and programmes as well as suitable activities. In order to carry-out such adaptation related pilot studies adequate fund will be required. The prominent sectors of economy such as Water, Agriculture and livestock, Forestry, Coastal/arid areas, Health, Energy and Infrastructure, which are severely impacted may be prioritised. Some of the adaptation studies to be undertaken could be:

- Adapting to the threats posed by changing precipitation and thermal regimes to agriculture, and food security.
- Understanding dynamically changing relationship between rising ocean temperatures and ocean biota including marine fish production.
- Changing livelihood of tribal communities due to shifts in area and boundary of different forest types and biodiversity.
- Adaptation studies on arid, wetlands, mangroves and coral reefs, grasslands and mountain ecosystems.
- Coastal agriculture and settlements.
- Climate change and human health
- Adaptive energy requirements
- Climate-sensitive industry and infrastructure
- Changing water availability in reservoir and its impact on fish production
- Changing precipitation regime, the availability of fresh water and water availability.

Outcome 3.2: National capacities on climate change risk and vulnerability analysis are strengthened including, but not limited to, capacity enhancement on modelling and projections using various climate models.

Output 3.2.1: Individual, Institutional and Systemic capacity strengthened for documenting climate scenarios (short, medium-, and long-term) based on Multiple Global climate models (GCM) / Regional Climate Models (RCMs) and climate change parameters at RCM grid level.

This output will result in documented climate scenarios for India (short-, medium-, and long-term), based on Multiple Global climate models (GCM) / Regional Climate Models (RCMs) and climate change parameters at RCM grid level. Consequently, it will assist in adapting to natural disasters, and climate variability and change which is a major concern on the sustainable development. The output will also try to develop web-based decision support systems at the national level for extreme climate events projection based on multi-model climate change ensembles.

Output 3.2.2: National and State level Capacity built on vulnerability and adaptation analysis, modelling and assessment enhanced, which may include assessment of vulnerability and recommendations for greater resilience to climate changes and natural disasters caused by climate change.

The capacity strengthening in climate change vulnerability and adaptation strategy assessments will go a long way in developing frameworks, methodologies and tools for vulnerability and adaptation assessments and prepare strategy on how to move from reactive to proactive approaches. Under the TNC project vulnerability profiles and adaptation frameworks have been developed as a part of studies launched for different sectors at the national level, while some are state level assessments, and a few are case studies. The adaptation matrix is being developed using an assessment of economic cost of impacts and adaptation options. These studies are being undertaken by a handful of institutions due to limited capacity. Therefore, it is important to enhance the National and State level Capacity on vulnerability and adaptation analysis, modelling, and assessments.

Output 3.2.3: Development of web-based information of multi-model ensemble climate change and extreme climate events projections at the national level.

Due to the inter-model differences in internal physics and the process of parameterization of the variables, the project will consider the range of projections from different models rather than depending on projection of one climate model only. Developing a web-based information of multi model ensemble as main tool available for developing projections of climate change in the future.

Output 3.2.4: Tools, methods, and training of staff for the assessment of climate change impact, vulnerability, risk, development and refinement of National Adaptation Framework and Plans thereunder.

There will be a need for capacity building and strengthening of institutions and individuals for undertaking assessment of climate change impact, vulnerability, risk and development of National Adaptation Framework and Plans thereunder. Efforts would be made under this output to strengthen the national institutes established by India (Output 1.2.2). The output should also result in the development of Vulnerability and Adaptation tools based on the outputs listed in Outcome 3.1.

PROJECT COMPONENT 4: FINANCE, TECHNOLOGY AND CAPACITY BUILDING NEEDS AND SUPPORT RECEIVED

Outcome 4.1: Updated information on constraints and gaps, and related financial, technical and capacity-building needs provided to UNFCCC through BUR-4 and 4NC.

Output 4.1.1: Report on the gap analysis and constraints pertaining to (a) technological innovation(s) and technology transfer, (b) financial assistance needed and received including scale, scope and speed of climate finance, and (c) finance requirements for mitigation measures based on the national and state climate change action plans, and (d) finance requirements for adaptation.

This output will result in a report on the gap analysis and constraints pertaining to (a) technological innovation(s) and technology transfer, (b) financial assistance needed and received including scale, scope and speed of climate finance, and (c) finance requirements for mitigation measures based on the national and state climate change action plans, and (d) finance requirements for adaptation.

Output 4.1.2: Completed technology needs assessment (TNA) for different sectors.

This output will result in a completed technology needs assessment (TNA) for different sectors such as renewable energy, energy efficiency, agriculture, waste handling, industrial processes, transport.

Output 4.1.3: Documentation on the detailed information of key mitigation-adaptation technology needs, availability of technologies in the country, national R&D programs, implementation & monitoring of activities, technology transfer needs, and financial support received and needed along with limitations.

This output will result in the documentation of the detailed information of key mitigation-adaptation technology needs, availability of those technologies in the country, national research and development (R&D) programs, implementation and monitoring of activities, technology transfer needs, and financial support needed along with limitations. Under this Output, documentation, secondary data and analysis of technology development for mitigation and adaptation in Annex-I countries including trends in part fulfilment of providing such technology in transfer to developing countries will also be undertaken. The Finance received through various channels, with detailed account of the flows in terms, inter alia, of sectors, type of activity financed, by all sources, including also current state of the climate finance issues and their implications in relation to India's need for financial support will be an important part of this Output. Financial flows through channels not recognized as adhering to climate finance as defined in the Convention will also be studied.

Outcome 4.2: Individual, institutional, and systemic capacity built, and technical skills strengthened.

Output 4.2.1: Technical, technological, financial, and capacity building needs for CC impacts, mitigation and adaptation assessed and reported in BUR4 and 4NC.

It is imperative to build technical, technological, and financial monitoring and reporting capacity at NICSSA and other institutions on CC impacts, mitigation, and adaptation needs. The capacity building needs to take place on three levels:

- (i) Individual level: educational, training and awareness raising activities.
- (ii) Institutional level: fostering cooperation between organizations and sectors, as well as the development of organizations and institutions, including their missions, mandates, cultures, structures, competencies, and human and financial resources; and
- (iii) Systemic level: creating enabling environments.

There is a need to establish, strengthen and build capacity of State and UT level Climate Change cells and research and education institutions.

PROJECT COMPONENT 5: MITIGATION ACTIONS AND DOMESTIC MRV

Outcome 5.1: GHG mitigation policies and measures including their macro-economic impacts reviewed.

In the SNC and the BUR1, India provided a detailed description of the mitigation actions. In the BUR2 and 3, and in the TNC along with detail description, India quantified the mitigation actions in terms of emission reductions. In this component of the BUR4 and 4NC project, the understanding of GHG mitigation policies and measures at national and state level and the understanding of gaps and constraints pertaining to financial, technical, and capacity needs to address climate change will be improved. This component will result in the following specific outputs:

Output 5.1.1: Documentation of national climate change mitigation actions, policies and measure, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans.

India has already enacted numerous legal and regulatory frameworks and policies that can aid in Climate Change mitigation and adaptation such as the Indian Forest Act 1927, the Wildlife (Protection) Act 1972, the Environment (Protection) Act 1986, the Biological Diversity Act 2002, the National Forest Policy 1988, National Agroforestry Policy 2014, and relevant sections under the Companies Act 2013. Besides these India also has the National Action Plan for Climate Change which has eight missions thereunder. At the state level there are the State Action Plans for Climate Change. This output will result in a report of the key national climate change mitigation actions, policies, and measures currently being implemented or planned in India including an analysis of the role of gender in mitigation activities, policy formulation and knowledge. This output will also result in the identification and evaluation of existing policies, measures, programmes, and projects both at the national and state levels that are focusing on climate change mitigation and adaptation. In addition to national missions, state level action plans for climate change aimed at mitigation of climate change will be assessed and incorporated in the report.

Output 5.1.2: (a) Improved future GHG emission scenarios for India using up-to-date information as well as the progress towards NDC targets assessed. (b) Climate finance received with specific reference to NDC targets that have been set conditional to the availability of finance, technology and capacity-building support.

This output will result in improved future GHG emission scenarios for India under this output using sector specific models for inventory sectors (Energy, IPPU, Waste, LULUCF, and Agriculture) for mapping of more up-to-date information for the period specified by para. 95 of Annex to decision 18/CMA1.

Output 5.1.3: Sector wise progress assessments and mitigation scenarios to model possible trajectory of greenhouse gas emissions by key sectors (such as energy, waste and industrial processes) up to 2050 developed.

This output will result in sector wise progress assessments, for each of the inventory sectors (Energy, IPPU, and Waste), which will be conducted on national actions to further reduce GHG emissions in India.

Output 5.1.4: Mitigation potential for energy and land-use change, and costs of action and non-GHG mitigation benefits.

This output will result in the assessment of the mitigation potential in key development sectors (energy, manufacturing and transport), policies and measures, the corresponding costs of actions, and the non-GHG mitigation co-benefits of each of the PAMs to contribute to the national climate change mitigation action plan. The mitigation potential for the sectors and abatement measures proposed may take note of the corresponding NDC(s).

Output 5.1.5: Report on GHG emission projections and removals, wherever possible and applicable.

This output will result in a report on the national GHG emission projections and removals, wherever possible and applicable. For this, institutions and models that can be used to develop project scenarios of GHG emissions will be identified. In addition, with the enhanced capacity, this output will project the emission reduction potential in future years for its actions and policies.

Output 5.1.6: Cost of mitigation for India

The additional costs that India has so far borne in the pre-2020 period and in the post-2020 period, with reference to the reporting period of BUR4 and NATCOM4. The costs will be estimated using both additionality with respect to a reference baseline as well as through estimating the cost of avoided carbon. International comparison on the scale of mitigating activity and the costs of mitigation would also be documented.

Outcome 5.2: Establishment of domestic Measurement Reporting and Verification arrangements supported.

Output 5.2.1: Strengthening national human and institutional capacities to establish a domestic MRV system of emissions and mitigation and means of implementation identified in coordination with similar initiatives.

This output will result in the capacity building of individuals (equal share of men and women) and institutions based on protocols for defining and the use of the MRV baseline. Under this output, portfolio of prioritized mitigation options would be developed for strengthening the capacity of sectoral ministries for adjusting and monitoring actions.

Output 5.2.2: Updated protocol(s) for defining baseline and MRV of GHG specific mitigation actions.

India has made efforts at the Central and State levels to establish MRV systems for specific programmes and projects for specific parameters but not GHG mitigation directly. Perform Achieve and Trade (PAT), Renewable Purchase Obligations (RPO) and other demand side management programmes are some of the mitigation programmes which have seen significant success in their implementation. Therefore, establishing an integrated domestic MRV system for GHG mitigation actions is a capacity building need for India. This output will result in an updated protocol for defining the baseline and MRV of GHG specific mitigation actions. A road map for the implementation of a domestic MRV system for emissions will also be developed under this output.

Output 5.2.3: Capacity enhanced for assessing and quantifying mitigation actions at the state level as recommended by ICA of previous BURs.

As identified by TTE in Technical Analysis summary report of BUR2, India will require an integrated domestic MRV system with associated data management system for tracking emissions, mitigation actions and support (climate finance, technology transfer and capacity-building). This output will result in the

enhancement of technical capacity for developing the requisite tools (e.g., procedures, guidelines, rules) for MRV, where applicable.

PROJECT COMPONENT 6: PREPARATION OF FOURTH BIENNIAL UPDATE REPORT AND FOURTH NATIONAL COMMUNICATION FOR SUBMISSION TO THE UNFCCC, KNOWLEDGE MANAGEMENT, MONITORING AND EVALUATION

Outcome 6.1: Preparation of Fourth Biennial Update Report and Fourth National Communication for submission to the UNFCCC, Knowledge Management, Monitoring and Evaluation.

The final outcome of the project will consist of India preparing its Fourth National Communication and Fourth Biennial Update Report, getting it approved by the Government of India, and submitting it to the UNFCCC. This component will result in the following more specific outputs:

Output 6.1.1: BUR4 and 4NC compiled and prepared for submission to the UNFCCC.

This output will result in India's Fourth National Communication and Fourth Biennial Update Report being compiled and prepared for submission to the UNFCCC. The Draft National Reports (BUR4 and 4NC) will be prepared and presented at workshops to seek the opinion of different stakeholders, particularly research organizations and Government Ministries. Apart from the required components of the NCs (national circumstances, GHG inventory, vulnerability and adaptation etc.), the descriptions of the NC process and methodology followed, activities and participation of different organizations will be included in the National Communication. After the expert consultations, the National Communication will be finalized and submitted to the Government of India for approval, and the approved document will subsequently be submitted to the UNFCCC. For the BUR, the project will prepare an additional chapter on domestic MRV arrangements. The BUR will not contain a dedicated chapter on vulnerability and adaptation as prescribed by Annex-3 decision-2/CP.17 of the UNFCCC. The Fourth BUR will be compiled and is expected to get submitted to the Conference of the Parties of the United Nations Framework Convention on Climate Change by December 2024 and the Fourth NC at the end of year 2027.

Output 6.1.2: Publication and dissemination of BUR4, development and dissemination of key policy papers relevant for decision making, technical reports and brief summaries of the key climate changes issues and findings for various stakeholders such as general public, civil society organisations and private sector.

This output will result in several technical reports developed and disseminated, such as the GHG inventories, V&A adaptation assessments at the sectoral level, key policy issues relevant for decision making, brief and summaries of the key climate changes issues and findings at the district level in collaboration with the local institutions/government involved. The 4FNC and BUR4 contains information that can guide policies not only at the central and state levels but also for other stakeholders such as civil society organisations and private sector. For example, implementation of BS-VI norms for tackling carbon emissions and pollutants led the automobile sector into disarray. Such problems caused by policy changes can be forecasted using the BURs and NCs. Therefore, it is imperative that the BURs and NCs are made available publicly and widely and in Hindi and other major languages.

Output 6.1.3: The ICA process for BUR4 is completed and suggestions incorporated in 4NC as may be appropriate.

This Output will ensure completion of the ICA process for BUR4.

Output 6.1.4. Project regularly monitored, knowledge management, financial audit conducted, lessons learned compiled and disseminated. Inception workshop, National Steering Committee meetings and Stakeholders Consultation workshops organized.

This output will result in improved institutional capacity in India for coordinating the national reports. It will consist in coordinating the preparation of the reports, performing regular audits for monitoring as well as evaluation of the progress and dissemination of lessons learned. It also includes a public awareness strengthening effort that seeks to disseminate the generated data and the preliminary and final results throughout the project duration to all relevant stakeholders.

Outcome 6.2: Other information relevant for the preparation of the 4NC.

Output 6.2.1: Comprehensive description of systematic observations and research on climate change

India launched the Long-Term Ecological Observatories (LTEO) programme as a multi-institutional, multi-disciplinary, all India coordinated project to monitor a range of themes and taxa across the Indian subcontinent including soil, forests, grasslands, invertebrates, fish, herpetofauna, birds, animal movement and marine ecosystems. WMO commissioned a global programme called Background Air Pollution Monitoring Network (BAPMoN) for identifying the levels of pollution as well as for study of the long-term trends in the concentration of trace constituents of the atmosphere which may affect the environment and induce a climate change. India set up 10 such BAPMoN stations for long-term studies. Five observatories of IMD namely at Chennai (Nungambakkam), Mumbai (Colaba), Panjim, Pune and Thiruvananthapuram have been recognized by WMO as a long-term observing station for more than 100 years. India is a member of the Global Climate Observing System (GCOS) which regularly assesses the status of global climate observations and produces guidance for its improvement. India is an observer state at the Arctic Council and is following projects such as the Arctic Migratory Birds Initiative and Actions for Arctic Biodiversity.

Output 6.2.2: Document the contributions to CC mitigation and adaptation of various stakeholders such as Ministries/Depts at central and state levels, Civil Society and private sector.

Various Ministries/Depts of the Central and State Government have entered into numerous multi- and bi-lateral agreements/collaborations which contribute towards CC mitigation and adaptation. Similarly, Civil society often implement projects which also contribute towards CC. Indian industries have made huge strides in reducing carbon emissions, ensuring sustainability along supply chain and financing climate change adaptation and mitigation. Such initiatives by various stakeholders needs to be collated, compiled and reported to UNFCCC along with needs for technology, finance and capacity building.

Output 6.2.3: New and other information not related to NCs and BURs under the aegis of the UNFCCC.

Under the TNC project, India has prepared a roadmap for achieving four NDC goals. Further, India is also required to submit a mid-century, long-term, low carbon development strategy to UNFCCC. Such studies may also be required to be commissioned under the present NATCOM-4 project. The first Global Stocktake (GST) of the Paris Agreement which is aimed to assess the world's collective progress towards achieving the purpose of the Paris agreement and its long-term goals will take place from 2021 to 2023. The results of the global stocktake may necessitate undertaking new studies for reporting to the Government of India or the international community.

COMPONENT 7: STAKEHOLDER AWARENESS AND CAPACITY BUILDING, AND SOUTH-SOUTH COOPERATION

Outcome 7.1: Stakeholder (such as leaders, bureaucrats, industries/businesses, media and general public) Aware and Capacity Built on climate change impacts, mitigation and adaptation at the national and state levels.

Output 7.1.1. Assessment of gaps, needs and priorities for education, training and public awareness important for stakeholders' involvement in the preparation of national reports, including the information on education and public awareness activities.

India as a country needs to undertake balanced mitigation and adaptation measures. Various institutions in India at the national and regional levels undertake a variety of responsive actions to combat climate change. However, a detailed analysis on capacity constraints, gaps, and related financial, technology and capacity building needs for overcoming the gaps and constraints is required. This project will support the identification of these constraints, gaps and related financial, technology and capacity building needs. Information will also include transfer of, and access to, environmentally sound technologies and know-how, the development and enhancement of endogenous capacities, technologies and know-how, and measures relating to enhancing the enabling environment for development and transfer of technologies. The output will result in an assessment of gaps, needs and priorities for education, training and public awareness important for stakeholders' involvement in the preparation of national reports, including the information on education and public awareness activities. The project shall sensitize and impart training on climate change impacts and adaptation actions for officials at all levels in the identified relevant Ministries and Departments.

Further, at the 26th CoP to the UNFCCC at Glasgow, the hon'ble Prime Minister of India highlighted the need for recognising that lifestyles have a big role in climate change and proposed a "One-Word Movement". He said that "This One-Word, in the context of climate, can become the basic foundation of One World. This is a word- LIFE...L. I. F. E. i.e. Lifestyle for Environment. Today there is a need for all of us to come together, together with collective participation, to take Lifestyle for Environment (LIFE) forward as a campaign. This can become a mass movement of environmentally conscious lifestyle. What is needed today is Mindful and Deliberate Utilization, instead of Mindless and Destructive Consumption." The Prime Minister's call is for sustainable lifestyles. Accordingly, under this project an attempt to assess (qualitatively and quantitatively) and document the sustainable lifestyle practices of India and other like-minded nations would be made. Furthermore, synergies and linkages with ESG and CSR by India's corporates would also be attempted.

Output 7.1.2: Public awareness campaigns on climate change at the national and state levels, as well as trainings on climate change for business, civil society organizations (CSOs), healthcare specialists, journalists and civil servants engaged in climate change organised.

Awareness among the public of India is an essential element of the global response to climate change. It helps people understand and address the impact of global warming, increases climate literacy among people, encourages changes in their attitudes and behaviour, and helps them adapt to climate change related trends. This output will result in public awareness campaigns on climate change at the national and state levels, as well as trainings on climate change for business, civil society organizations (CSOs), healthcare specialists, journalists and civil servants engaged in climate change. It will develop resource materials on best practices to enhance awareness among businesses, civil society organizations (CSOs), healthcare specialists, journalists, students, researchers, etc.

India is the first country in the world to make Corporate Social Responsibility (CSR) mandatory, following an amendment to the Companies Act, 2013 in April 2014. Further, the Companies Act, 2013 also introduced ESG disclosure requirements for companies. Section 134 (m) mandates companies to include a report by their Board of Directors on conservation of energy, along with annual financial statement. Training and awareness on clarity, gaps, needs, and requirements of addressing Climate Change Impacts, Mitigation and Adaptation through the mandatory CSR and ESG would also be carried out under the project.

Output 7.1.3: Strengthened institutional and policy support framework for undertaking climate change actions and capacity building at various levels including publications for wider dissemination and discussion at national and state levels.

This output will result in the strengthening of the institutional and policy support framework for climate change actions in India. It will additionally improve the capacity building at various levels and publish publications for wider dissemination and discussion at national and state levels. National circumstances and institutional arrangements relevant to the progress made in implementing and achieving NDC targets under Article 4 of Paris Agreement will be factored in the report. This will include information on how the national circumstances affect GHG emissions and removals over time. National circumstances relevant to adaptation actions, mitigation actions and technology, finance and capacity support will also be documented. Despite of significant progress in inter-agency cooperation and setting up of national climate change action plans, more needs to be done to strengthen the relationship between national agencies and other ministries mandated to work on climate change and to enhance coordination among agencies at all levels of government.

Output 7.1.4: Enhanced framework for implementation of State Action Plan on Climate Change (SAPCC) through assessment of various needs/constraints such as technical, capacity, research, and financial constraints.

While the implementation of climate strategies is the responsibility of the individual sector departments, the nodal agency for the implementation of the State Action Plan on Climate Change (SAPCC) in each state is expected to play a coordinating and guiding role. This output will result in strengthened coordination mechanisms of the nodal agencies for improved planning and implementation of climate change strategies and actions across departments at the state level for implementation of their SAPCCs. It will also ensure effective and meaningful implementation of the plans including tackling the political economy of climate change; addressing institutional bottlenecks; moving towards investment-ready plans; and better leveraging available resources.

Outcome 7.2: South-South Cooperation

Output 7.2.1: Lessons learnt and best practices exchanged with other parties of the global south.

The institutions and project management team will share and disseminate best practices and lessons learnt through print, digital, broadcasting and internet media such as workshops/meetings/ conferences, international and national publications, exchange/trainings/capacity building of experts, and social networks/websites/podcasts/online forums. India's achievements may also be highlighted at major fora such as CoP, SBI-SBSTTA to the UNFCCC, and IPCC meetings and other international meetings/conferences.

Output 7.2.2: Trainings and capacity building in GHG inventory, MRV, CC mitigation and adaptation and other components of BURs and NCs for national and international experts.

The institutions and project management team may undertake trainings and capacity building in GHG inventory, MRV, CC mitigation and adaptation and other components of BURs and NCs for the experts of participating national experts and experts of other countries through print, digital, broadcasting and internet media such as workshops/meetings/ conferences, international and national publications, exchange/trainings/capacity building of experts, and social networks/websites/podcasts/online forums.

D. DESCRIBE, IF POSSIBLE, THE EXPECTED COST-EFFECTIVENESS OF THE PROJECT

The incremental cost reasoning of the project has not changed from the PIF stage.

The activities of the 4NC and BUR4 are focused on areas and sectors that have been identified as most relevant for India and draws on the experiences and results of the previous NCs and BURs. A central element of the strategy to enhance the cost effectiveness of the 4NC and BUR4 project is the capitalization on institutional networks and working relations built during the previous NCs and BURs, and on existing experience with climate change within national institutions. Furthermore, improved quantification and reporting of GHG emissions has clear and immediate benefits for India for improved international reporting and identification of GHG mitigation opportunities and improved evidence-led policy-making.

Cost-effectiveness of the project will be ensured by 1) the review and inclusion in 4NC and BUR4 of all climate change related studies and actions developed in India such as Climate Adaptation & Financing in Rural India (CAFRI) and the BMU financed project on Supporting the Institutionalisation of Capacities on Climate Change Studies and Actions (ICCC) and 2) coordinating the project with the other GEF funded projects related to the transparency framework.

In India, UNDP supports a large portfolio of climate change programmes and projects and UNDP India has been working collaboratively with many ministries of the Government of India (e.g. National Bureau of Energy Efficiency, Ministry of New and Renewable Energy), research organization and civil society organizations in implementing a number of projects as well as several state governments. UNDP also supports the Government of India in strengthening the capacity of ten state governments in preparation of their SAPCC. Synergies between the SAPCC and the 4NC and BUR4 project will contribute to improved capacities and better coordination among different stakeholders at the national and state levels.

India submitted to the UNFCCC the third BUR on 20 February 2021 with the latest GHG inventory year being 2016 and not fulfilling the reporting provision that “the GHG inventory shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent years if information is available” (Decision 2/CP.17 para. 41(g)). Under this project, India will elaborate the Fourth BUR and submit it by the end 2024 (which means that latest GHG inventory year to be submitted within the BUR4 would be 2021). Building on the fourth BUR and under a different GEF funded enabling activity, India will develop the first BTR under the ETF to be submitted in 2024 (which means that latest GHG inventory year would be 2022 as, according to MPGs (Decision 18/CMA.1), the latest reporting year shall be no more than two years prior to the submission of its national inventory report or three years flexibility is chosen; and the national inventory report will have to be updated according to the latest outcomes at COP26). This first BTR project will be implemented during 2023-2026. In parallel, and under this GEF funding, the Fourth NC will be elaborated to be submitted in 2027 (with latest GHG inventory year 2024/25 and all the additional information included in NCs compared to BURs/BTRs to meet the objectives of the UNFCCC).

E. DESCRIBE, DESCRIBE THE BUDGETED M & E PLAN

The project results, corresponding indicators and mid-term and end-of-project targets in the project results framework will be monitored annually and evaluated periodically during project implementation. If baseline data for some of the results indicators is not yet available, it will be collected during the first year of project implementation. The Monitoring Plan included in Annex 5 of the accompanying project document details the roles, responsibilities, and frequency of monitoring project results.

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the [UNDP POPP](#) (including guidance on GEF project revisions) and [UNDP Evaluation Policy](#). The UNDP Country Office is responsible for ensuring full compliance with all UNDP project monitoring, quality assurance, risk management, and evaluation requirements.

Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the [GEF Monitoring Policy](#) and the [GEF Evaluation Policy](#) and other [relevant GEF policies](#)[1]. The costed M&E plan included below, and the Monitoring plan in Annex, will guide the GEF-specific M&E activities to be undertaken by this project.

In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report.

Minimum project monitoring and reporting requirements as required by the GEF:

Inception Workshop and Report

A project inception workshop will be held within 2 months from the First disbursement date, with the aim to:

1. Familiarize key stakeholders with the detailed project strategy and discuss any changes that may have taken place in the overall context since the project idea was initially conceptualized that may influence its strategy and implementation.
2. Discuss the roles and responsibilities of the project team, including reporting lines, stakeholder engagement strategies and conflict resolution mechanisms.
3. Review the results framework and monitoring plan.
4. Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP and other stakeholders in project-level M&E.
5. Update and review responsibilities for monitoring project strategies, including the risk log; SESP report, Social and Environmental Management Framework and other safeguard requirements; project grievance mechanisms; gender strategy; knowledge management strategy, and other relevant management strategies.
6. Review financial reporting procedures and budget monitoring and other mandatory requirements and agree on the arrangements for the annual audit.
7. Plan and schedule Project Board meetings and finalize the first-year annual work plan.
8. Formally launch the Project.

GEF Project Implementation Report (PIR)

The annual GEF PIR covering the reporting period July (previous year) to June (current year) will be completed for each year of project implementation. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR. UNDP will undertake quality assurance of the PIR before submission to the GEF. The PIR submitted to the GEF will be shared with the National Steering Committee. UNDP will conduct a quality review of the PIR, and this quality review and feedback will be used to inform the preparation of the subsequent annual PIR.

Knowledge management

The project team will ensure extraction and dissemination of lessons learned and good practices also in relation to mainstreaming gender equality considerations in climate action to enable adaptive management and upscaling or replication at local and global scales. Results will be disseminated to targeted audiences through relevant information sharing fora and networks. The project will contribute to scientific, policy-based and/or any other networks as appropriate (e.g., by providing content, and/or enabling participation of stakeholders/beneficiaries including women).

Independent Mid-term Review (MTR)

The Mid-term review will help the project assess progress towards attainment of objective, outcomes and outputs. Further, the review would give an opportunity to reflect upon what worked and what did not and take mid-course corrections. The terms of reference, the review process and the final MTR report will follow the standard templates and guidance for GEF-financed projects available on the [UNDP Evaluation Resource Center](#) (ERC).

The evaluation will be “independent, impartial and rigorous”. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the BPPS/NCE-VF Directorate.

The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC, at the mid-point of project implementation. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report’s completion.

Terminal Evaluation (TE):

The Terminal Evaluation will help the project highlight the attainment of objective, outcomes and outputs. Further, the evaluation would give an opportunity to reflect upon what worked and what did not for further EA projects. The independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance for GEF-financed projects available on the [UNDP Evaluation Resource Center](#). TE should be completed 3 months before the estimated operational closure date, set from the signature of the ProDoc and according to the duration of the project. Provisions should be taken to complete the TE in due time to avoid delay in project closure. Therefore, TE must start no later than 6 months to the expected date of completion of the TE (or 9 months prior to the estimated operational closure date).

The evaluation will be “independent, impartial and rigorous”. The evaluators that UNDP will hire to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/NCE-VF Directorate.

The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC at least three months before the end of project implementation. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report's completion.

Final Report

The project's terminal GEF PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the National Steering Committee during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information

To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy[2] and the GEF policy on public involvement[3].

Monitoring and Evaluation Plan and Budget			
GEF M&E requirements	Responsible Parties	Indicative costs (US \$)	Time frame
Inception Workshop and Report	NATCOM Cell	USD 21,000	Inception Workshop within first two months of First Disbursement
Development of M&E System	<ul style="list-style-type: none"> NATCOM Cell MoEFCC 	None	At the beginning of project implementation
Measurement of Means of Verification of Project Results	National Project Director will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members	To be finalized in the Inception Phase and Workshop	Start, mid, and end of project (during evaluation cycle) and annually when required
Measurement of Means of Verification for Project Progress on output and implementation	Oversight by National Project Director Project Team	To be determined as part of the Annual Work Plan's preparation	Annually prior to ARR/P IR and to the definition of annual work plans
Project Implementation Report	<ul style="list-style-type: none"> National Project Director and Team UNDP CO UNDP RTA 	None	Annually
Independent Mid-term Review	<ul style="list-style-type: none"> Project Management Team UNDP CO UNDP RTA External Consultants (i.e., evaluation team) 	USD 40,000	At the mid-point of project implementation
Independent Terminal Evaluation	<ul style="list-style-type: none"> Project Management Team UNDP CO UNDP RTA External Consultants (i.e., evaluation team) 	USD 50,000	At least three months before the end of project implementation
Terminal Report	<ul style="list-style-type: none"> National Project Director Project management Team 	USD 10,000	Though the Terminal Report is not required as a summary of the findings of studies will be presented

			<p>ented in BUR-4 and 4N C, MoEFCC may consider bringing out a comprehensive report of all major findings of the various studies.</p> <p>At the end of project implementation.</p>
TOTAL indicative COST		USD 121,000	

[1] See https://www.thegef.org/gef/policies_guidelines

[2] See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

[3] See https://www.thegef.org/gef/policies_guidelines

F. EXPLAIN THE DEVIATIONS FROM TYPICAL COST RANGES (WHERE APPLICABLE)

N/A

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)

A. Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

Focal Point Name	Focal Point Title	Ministry	Signed Date
Ms. Richa Sharma	Former GEF Operational Focal Point of India	Ministry of Environment, Forest and Climate Change	2/3/2020

B. Convention Participation

Convention	Date of Ratification/Accession	National Focal Point
UNFCCC	11/1/1993	Mr. Neelesh Kumar Sah Joint Secretary, Ministry of Environment, Forest and Climate Change

ANNEX A: Project Budget Table

Please attach a project budget table.

Expenditure Category	Detailed Description	Component (USDeq.)										Total (USDeq.)	Responsible Entity (Executing Entity receiving funds from the GEF Agency)[1]
		Component 1	Component 2	Component 3	Component 4	Component 5	Component 6	Component 7	Sub-Total	M&E	PMC		
Equipment	Required software and equipment to input information/ data on existing capacity, schemes, programmes, institutional arrangement to overcome the identified constraints and gaps USD 18,000	18,000							18,000			18,000	UNDP [2]
Equipment	Communication and audio-visual equipment in support of the capacity building events and activities USD 13,500	13,500							13,500			13,500	UNDP [2]
Equipment	Communication and audio-visual equipment Lump sum USD 10,000								0		10,000	10,000	UNDP [2]
Equipment	Required equipment and software for deducing emission factor to improve		151,000						151,000				UNDP

Equipm ent	e the accura cy of the GH G inventory of India for ri ding the tier ladder. USD 151,000		151,000						151,000			151,000	UNDP [2]
Equipm ent	Required glo bal and regio nal climate models to d evelop the di fferent clima te scenarios USD 155,414			155,414					155,414			155,414	UNDP [2]
Equipm ent	Communicat ion and audi o-visual equi pment in su pport of the capacity buil ding events and public a wareness ac tivities. USD 92,450					92,450			92,450			92,450	UNDP [2]
Sub-co ntract to exec uting partne	DPC costs - Direct Projec t Costs: for s ervices rend ered by UND P to the proj ect, accordin g to the Lett er of Agree ment (Annex 13 of the pro ject docume nt) are the c osts of admi nistrative ser vices (such as those rela ted to huma n resources, procuremen t, finance, an d other funct ions) provid								0	50,000	50,000	50,000	UNDP

[illegible]

[illegible]

[illegible]

<p>Contra ctual Service s – Compa ny</p>	<p>or specialist on GHG emissions from the Industry sector according to the 2006 IPCC Guidelines for improvement of the GHG inventory USD 130,000 4. Contract for specialist on GHG emissions from the Waste sector according to the 2006 IPCC Guidelines for improvement of the GHG inventory USD 120,000 5. Contract for specialist on GHG emissions from the AFOLU sector according to the 2006 IPCC Guidelines for improvement of the GHG inventory USD 130,000. 6. Contract for MRV specialist to strengthening the NIMS by widening the coverage and including all sectors USD 150,600</p>		838,500						838,500			838,500	MoEFC
	1.Contract f												

[illegible]

<p>Contractual Services – Company</p>	<p>USD/day).</p> <p>1.Contract for specialist on assessing and documenting finance needs (70 days; 600 USD/day).</p> <p>2.Contract for specialist on assessing and documenting technological needs (63 days; 600 USD/day).</p>				79,800				79,800			79,800	MoEFCC
	<p>1.Contract for specialist on mitigation actions, policies, and measures being implemented or planned in India to support the national specialist (150 days; 600 USD/day).</p> <p>2.Contract for specialist on GHG emission scenarios in the 2006 IPCC Guidelines sectors to coordinate and support the national specialists in the progress assessments and emissions scenarios (150 days; 600 USD/day).</p>												

Contra ctual Service s – Compa ny	3.Contract f or Technolo gy Needs As sessments (TNA) speci alist to analy se the gaps and constrai nts in India f or mitigation measures (1 50 days; 600 USD/day). 4.Contract f or legal spec ialist for the analysis of p olicies, mea sures, progr ammes, and projects bot h at the nati onal and sta te levels that are focusing on climate c hange mitig ation (125 d ays; 600 US D/day). 5.Contract f or specialist on climate c hange MRV systems rela ted to GHG s pecific mitig ation action s (125 days; 600 USD/da y).					420,00 0			420,00 0			420,000	MoEFC C
Interna tional Consul tants (MTR)	Budget note #26 and #27 - National an d Internation al experts on monitoring a nd evaluation for Mid-ter								0	50,000		50,000	UNDP

(WTRV TE)	m review and terminal evaluations (90,000 USD; lumpsum).												
Local Consultants	<p>1.National specialist on India's national climatic circumstances (120 days; 300 USD/day).</p> <p>2.National specialist on India's national economic circumstances (120 days; 300 USD/day).</p> <p>3.National specialist on India's sub-national circumstances at community level (83 days; 300 USD/day).</p> <p>4.National mitigation specialist for the analysis of national gaps, and related financial, technology and capacity building needs (70 days; 250 USD/day).</p> <p>5.National adaptation specialist for the analysis of national gaps, and related</p>	166,900							166,900			166,900	UNDP [2]

[illegible]

Local Consultants	ons from the Transport sector according to the 2006 IPCC Guidelines for improvement of the GHG inventory (206 days; 300 USD/day). 3.National specialist on GHG emissions from the Industry sector according to the 2006 IPCC Guidelines for improvement of the GHG inventory (206 days; 300 USD/day). 4.National specialist on GHG emissions from the Waste sector according to the 2006 IPCC Guidelines for improvement of the GHG inventory (206 days; 300 USD/day). 5.National specialist on GHG emissions from the AFOLU sector according to the 2006 IPCC Guidelines for improvement of the GHG inventory (206 days; 300 USD/day).	339,000						339,000			339,000	UNDP [2]
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	ntory (206 days; 300 USD/day). 6.MRV specialist to support the strengthening of the NIMS by widening the coverage and including all sectors (100 days; 300 USD/day).												
Local Consultants	1.National specialist on climate change vulnerability to provide variability maps at district level (155 days; 300 USD/day). 2.National specialist on adaptation impact assessments and projections (155 days; 300 USD/day). 3.National specialist on climate change scenario models to develop projections on short-, medium-, and long-term climate scenarios at the regional level (155 days; 300 USD/day). 4.National s			292,800					292,800			292,800	UNDP [2]

[illegible]

[illegible]

	for sector-wise progress assessment and emission scenarios (70 days; 300 USD/day). 6.National specialist on GHG emissions from the AFOLU sector for sector-wise progress assessment and emission scenarios (70 days; 300 USD/day).												
Local Consultants	1.National Specialist supporting consultations and finalisation of the FNC and its submission to UNFCCC (200 days; 250 USD/day). 2.National Specialist supporting consultations and finalisation of the BUR and its submission to UNFCCC (160 days; 250 USD/day).						90,000		90,000			90,000	UNDP [2]
Local Consultants	Budget note #26 and #27 - National and International experts on monitoring and evaluation								0	40,000		40,000	UNDP

(MTR/TE)	n for Mid-term review and terminal evaluations (90,000 USD; lumpsum).												
Trainings, Workshops, Meetings	1.Public awareness campaigns, workshops, and seminars on climate change to increase public awareness. 4 times, USD 100/person for 100 people, sub-total: USD 40,000 2.Capacity building of national Ministries and Departments on the climate change impacts and adaptation actions in India.5 times, USD 100/person for 64 people, sub-total: USD 32,000	72,000							72,000			72,000	UNDP [2]
Trainings, Workshops, Meetings	1.Capacity building events on protocols for defining MRV baselines. 17 times, USD 100/person for 100 people, sub-total: USD 170,000 2.Capacity building events for assessments							170,000				170,000	UNDP [2]

	ng and quantifying the impacts of mitigation actions.												
Trainings, Workshops, Meetings	Public awareness activities and capacity building to disseminate the generated data and preliminary and final results in the project. 2 times, USD 100/person for 100 people, sub-total: USD 20,000						20,000		20,000			20,000	UNDP [2]
Trainings, Workshops, Meetings	Project inception workshop and Mid-term review and terminal validation workshops USD 20,000								0	20,000		20,000	UNDP [2]
Trainings, Workshops, Meetings	Consultation workshops of national reports with research organisations and Government Ministries. 6 times, USD 100/person for 100 people, sub-total: USD 60,000							60,000	60,000			60,000	UNDP [2]
Trainings, Workshops	Internal consultation workshops and National Steering Committee meeting								n		25,000	25,000	UNDP

[illegible]

[illegible]

Travel	ses and USA of local consultants. Travel expenses to attend the relevant awareness programmes and south south cooperation events. Domestic travel for local consultants and experts at USD 2,500/mission for 22 times, sub-total: USD 55,000							55,000	55,000			55,000	UNDP [2]
Travel	Travel Cost for PMC staff USD 10,000								0		10,000	10,000	UNDP [2]
Other Operating Costs	Communication and audio-visual equipment in support of the capacity building events and public awareness activities USD 4,000						4,000		4,000			4,000	UNDP [2]
Other Operating Costs	Communication and audio-visual equipment in support of the workshops USD 6,000								0	6,000		6,000	UNDP [2]
Other Operating Costs	Communication and audio-visual equipment in support of the public awareness activities. Lumpsum USD 24,500							24,500	24,500			24,500	UNDP [2]

	m USD 24,500												
Other Operating Costs (project audit)	Annual audit cost, total USD 15,000								0		15,000	15,000	UNDP
Office supplies	Supplies Lumpsum USD 4,786								0		4,786	4,786	UNDP [2]
Grand Total		550,000	1,388,500	963,214	178,800	895,700	119,000	139,500	4,234,714	121,000	210,286	4,566,000	

[2] Footnote explanation added to related UNDP lines under Column N : UNDP will be providing execution support to the Executing Entity (Ministry of Environment, Forest and Climate Change) for these activities, as requested by the GEF Operational Focal Point of India. UNDP will use its own operational rules and guidelines for these activities. The Executing Entity will maintain ultimate responsibility and accountability for the use of GEF resources and the successful achievement of project outputs, in alignment with the approved annual work plans.

